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The Human Figure in Modern Painting

George Kimball Plochmann

Carolyn Plochmann. Business as Usual *(1979). Oil on masonite, 24"x30". (Photo courtesy of Kennedy Galleries, New York.) Carolyn Plochmann's later work usually presents human figures and other objects interpretable in modified realistic terms, but juxtaposed in ways invoking principles of imaginative and intellectual association. This juxtaposition suggests Magic Realism or Extended Realism as a possible category.*

The Human Figure in Modern Painting

by George Kimball Plochmann

INTRODUCTION

A great many viewers have concluded that the phrase "modern art" is almost a contradiction in terms, and that some time around the beginning of this century painters took a wrong turn. Although these artists were bold and original—so runs the argument—they were unable to produce images that a fair proportion of the public would enjoy as artistic. Now that the century has but a little way to go, the question, *But is it art?* is still asked, despite the fact that the chief movements that bemused and often dismayed early viewers are now several decades old.

Artists of earlier centuries often felt themselves obliged to do their best to represent the human figure as it appeared to the normal eye in daylight, in ordinary postures and activities. The faithful depiction of the human being was, however, a relatively late achievement in most of the cultures of the past, and was not often imparted by one such culture to the next. In the earlier phases of Egyptian, Greek, medieval, and even Renaissance societies, artists very infrequently sought exactness of living proportions, as opposed to proportions worked out from an arbitrary mathematical starting point. This was true as well in medical illustrations, where one would expect to find close attention to detail and verisimilitude. It was only in the Middle and High Renaissance that anatomical research, a more sophisticated and flexible application of mathematics, and a respect for earthly life came together to produce a naturalistic art, one that could almost rival photography.

The difference between those distortions of earlier centuries which were accepted by the populace and those of our own time which have had difficulty making headway lies in the great heterogeneity

of art in the twentieth century. As soon as Cubism became tolerable to museum-goers, the Futurists were introducing a wholly different approach, and then came the DaDaists and Surrealists with their own novelties. Ancient art changed far more slowly, and the public became well accustomed to the conventions that in point of fact were markedly distorting images of the body.

Not only were such conventions solidified for the painting of bodily shapes, but there were also settled ways of interpreting the moods animating those bodies. It is fair to say that in Egyptian art the figures were generally sedate and concentrated, in most early Greek art they were serene, in much medieval painting—both Byzantine and Western—they were sublime or at least reverent. Increasingly since the sixteenth century, depictions of the body have varied from dignified to raffish, innocent to licentious, healthy to moribund.[1] It would be convenient if we could diagram the development of the painting of the last four centuries, more or less, as a straight line, moving either from meticulous to hasty and crude (as many persons think) or from hasty to meticulous (as many others, using different examples, hold). The truth is, however, far more complicated, and here the history of art somewhat resembles that of medicine in the same period. In the latter a major emphasis upon a chemical approach to cells has been opposed by one looking to more and more holistic contexts, so that tissues, organs, the body as an entity, the social milieu, and finally the earth and its atmosphere are considered vital to the study and improvement of physical and mental health. In neither art does a single trend properly summarize what has taken place.

In the second half of the nineteenth century human figures in paintings were generally modelled, that is, shaded and tinted to make them appear more nearly three-dimensional; and proportions of limbs, trunks, heads, were roughly similar to those in average living persons. One trend in recent painting is concerned more with precise results startlingly similar to the appearance of real people except for the inevitable squeezing of three dimensions into two. Another has introduced varied distortions of color and of proportion, has often dismembered the body, has diminished its vitality and pictorial significance to the point where it has become scarcely recognizable or is omitted altogether. Both trends now have an extensive history.[2]

The living figure has been painted for many purposes: It is used as a means, either a symbol for something higher (as in religious art) or else a way of ornamenting (as in the filling of a blank wall or the adding of color to an otherwise dull room). This essay, however, concentrates upon the representative aim, when the painting is

taken primarily as an end in itself, and is not intended to be a means to a further end. Sometimes, of course, the three purposes coincide or at least overlap; in other paintings they would exclude each other.[3]

Representative painters must, to achieve good likenesses, observe many requirements. They must know both the proportions of the objects represented and the subtle variations in color including hues and intensities of light striking upon surfaces. They must know textures of these surfaces—skin, eyes, hair, nails, clothing and adjacent furniture. All these, together with perspective or some equivalent system of spatial rendering, must be indicated with whatever degree of mastery art requires, otherwise an attractive back or an arm or thigh will seem a nondescript pudding, an eye will be a mere colored patch.

The next three sections of this perforce rapid sketch will first outline certain principles and historical antecedents of the treatment of the human body and its external parts by modern painters, and then offer a classification of styles of the last hundred years in respect to any such treatment. A conclusion briefly summarizes relations between the history of the medical and the visual arts.

PROPORTION IN THE HISTORY OF VISUAL ARTS

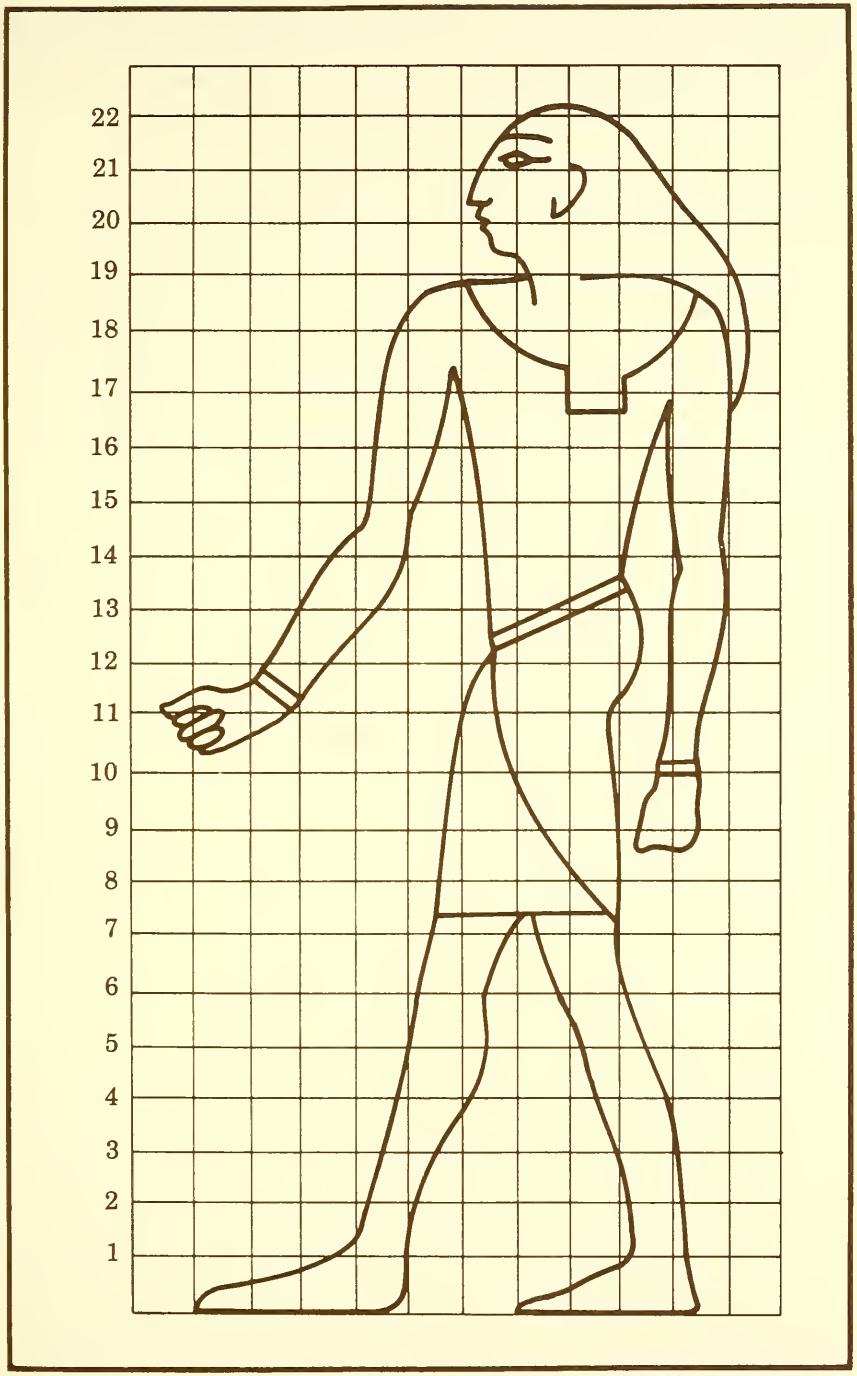
A. GENERAL

Realization of the requirements as regards proportion came early. All bodies, animate or inanimate, possess extension and dimension and with these, proportions—the ratios of one extension in a dimension to another, of one part to another, of a part to a whole or a whole to its neighbor. All bodies, being material, possess some weight, even if less than in those happening to be near by. They move, if only relatively to other bodies, and if only because they are passive recipients of forces exerted from outside. Paintings can reproduce frontal extensions and their proportions, but can only *suggest* depth, weight, motion, and force, since representing form is static and flat. The analogue in paint to a motionless playing card is quite different from the analogue to a leaping youth. Paint medium cannot overcome this, but painters can establish their own principles, often departing from scientifically exact ones for organizing the canvas, imposing instead a design requiring that they distort whatever representation of natural bodies is included. They need not, in fact cannot, reproduce nature perfectly but must instead achieve some result having its own internal harmony. This

will aid the viewer in discovering a totality, something complete and set apart from everything else in the world. The sciences can help painter and spectator, but they must not govern either one here, for both the creation and the appreciation of art requires the distilling of individual experience.[4] It may be of interest to try, for example, to diagnose pathological conditions of a portrait sitter whose nose blossoms with carbuncles, or whose failed eyesight leads him to fall in a ditch, or whose growth is stunted; but faithful depiction of those defects may have been but a small part of the artist's own purpose. It has also become fashionable to try to infer from paintings what defects, if any, the artist suffered from—nearsightedness, chronic depressions, or (since Freud) sexually-based neuroses. Such efforts usually fail for the reason that a major artist can vary the mood and visual content of a painting at will, and may work on two quite diverse pieces concurrently. Or one may, in the midst of overwhelming personal misfortunes, produce masterpieces of unrivaled vigor and gaiety. Moreover, to take a set of paintings without fully-documented corroboration as a sign of poor vision is risky at best. A painting is not like a piece of carpentry, where all parts must fit, must be strong and be upright or at angles regulated by physical laws.

In seeking good proportions, there are two chief and conflicting premises from which artists have worked.[5] The first is that determination of proportions should begin with examining the body, living or dead, and that inductive generalizations regarding ratios of parts to parts and to wholes starts from there. Here the artist learns anatomy and inspects specific relations of trunk, limbs, etc. He then chooses perspectival principles suiting his purposes, no doubt modifying bodily measurements in accord with an optical system of his devising. The second, opposite premise specifies well-known mathematical ratios thought to enshrine perfect beauty, and from these goes on to fit the painted figure into measures derived by simple algebra from those ratios.[6] Both approaches have had their distinguished adherents, and both have also been ignored, especially in the twentieth century. From approximately 1450 to 1850, however, the bypassing of "correct" proportions (on either premise) would have seemed so daring as to put it beyond any reasonable excuse.[7]

Some chief aspects of the body emphasized in modern academic art instruction are that axial direction has to do first with an imaginary line running from the head along the spine to the coccyx, and second with lines joining the most significant symmetrically-related points (the two ears, the shoulders, hips, and others). These lines intersect the chief vertical axis, perpendicularly if in a normal figure standing fully erect. Such aspects



Later Egyptian plan for drafting the human body. This is not a method of enlarging, though it could be used as such by merely increasing the sizes of the squares. It is instead a general scheme for constructing all figures regardless of size, and helps explain the great uniformity in the traditions of Egyptian painting and sculpture.

have nothing to do with roundness or flatness of the appearance, but are connected with the presumed disposition of weight, whether on one foot or on two, hence with possible tension and compression of limbs, trunk, neck, and the rest.

Within the morphological approach, artists on the whole have believed themselves responsible for gross surface anatomy only, and consider inner structures only insofar as these condition the surface. More than most physicians, however, painters have to consider position and gesture from at least two standpoints. The first is in terms of the posture itself—for example, how much the figure is twisted so the shoulders are no longer parallel or even coplanar with the pelvis (the Italians called this *contrapposto),* or how far the arm is raised or a finger is extended. The second is the ever-present significance, ritualistic or otherwise, of these postures and gestures—whether lying prone is a sign of sensuous enjoyment of fresh earth or a sign of abject defeat by an enemy, or whether raising a hand is for saluting or striking. The Egyptians and Greeks worked out fairly uniform interpretations, so that the left foot forward always betokened the privilege to command, and so on.

If there is a radically new theory of proportions formulated in our century by or for artists, it certainly has not been well disseminated, and recent artists have had to be satisfied with past theories, generally those of the Renaissance. But even the Renaissance authors cited their Roman and Greek predecessors, and were partly a continuation, partly a correction, of the earlier efforts. We should consider at least three approaches from those periods: Ancient, Medieval, and Renaissance.

B. PROPORTION IN ANCIENT AND MEDIEVAL ART

In Egypt, two diverse principles governed. First, the absolute and relative size of a representing figure, be it a statue or painting, was determined by its subject's importance. The hierarchy of gods, pharaohs, ministers, and so on downward was obvious in murals and carvings. The second principle was that to represent a human body, the artist had first to place on his material's surface a grid having a specified number of squares, at first eighteen, later twenty-two, in height and about half the number in width.[8] In both systems the ankle falls on the first horizontal line. In using twenty-two squares, the knee falls on the sixth line, the shoulders on the eighth, the top of the head on the twenty-second. Extended arms and hands are fitted to appropriate squares in a horizontal row. The system is defective, since many important bodily parts fall on no lines at all.

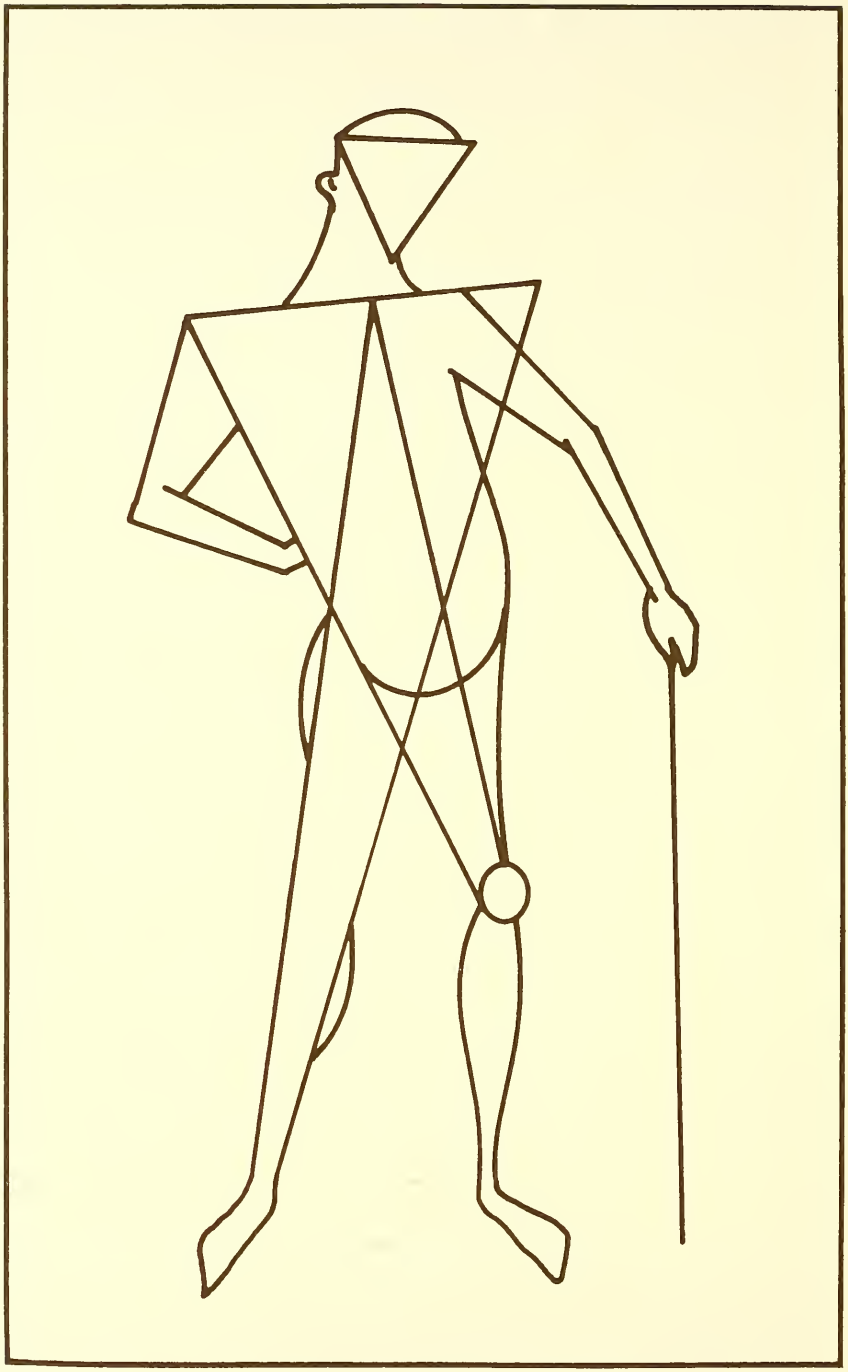
The Egyptians started from one anatomical segment, the interval from sole to anklebone. Later, the Greek systems, of which that of Polyclitus[9] may have been the first, used fractions—the head is one-ninth of the whole body, the hand is one-third of the forearm, and so forth.

For the artist, however, terming the head one-ninth of the whole body is different from saying the body is nine heads tall, regardless of the arithmetical equivalence, for even if the measures come out the same, preliminary sketching is altered. Subdivision of the whole permits a certain flexibility (the fractions are changed to accommodate a particular artist's wishes), a more sweeping stroke of the brush, if desired. Using a part such as a head, face, or foot as a module requires that the artist stick to multiples, thereby having to build the whole from a segment selected before that whole is fully envisaged.

The late medieval period, particularly the Gothic, stressed priority of architecture over painting and sculpture. A carving was executed to fit an arch, a painting to fill a niche, the shapes and sizes of these being dictated by structural concerns. Artists were doubly confined by the bodily subdivisions and by spaces allotted. Postures were now hunched, or stretched, gestures were exaggerated or diminished. A well-known book of the time (ca. 1225) was by the Frenchman Villard de Honnecourt, writing of portraiture used to decorate buildings. He used geometric shapes such as the inverted triangle and oblong as groundplans for drawing the human body, with results startling, if lifelikeness is a criterion. Some artists also adopted a principle stemming indirectly from Plato (and considerably modifying his thought) to the effect that the body and soul, in mathematical relations and motions, mirror the structural features and dynamism of the cosmos.[10] This theory of macrocosm and microcosm did not so much affect bodily measures as it did appreciation of the body's purposes and functions—which were soon tied to planets, sun, moon, and stars. The person took on a dignity through association which in a more secular world it would no longer possess.

C. THE RENAISSANCE AND AFTER

It is a rare feat to be able to harmonize the best features of these systems. Not until after early Renaissance painters had greatly extended their art by introducing more spacious landscape, larger numbers and kinds of persons, and buildings, arches, and other backdrops for the principals in their scenes was this accomplished. A painting was no longer mainly an icon or monument to a saint,



Fighting man, after Villard de Honnecourt, a thirteenth-century architect, who apparently used neither squares nor fractions, but instead selected arbitrarily a simple geometric figure (in this case a triangle) as the basis for drawings of men in various occupations.

fixing an eternal pose, but an image of personages in an event. Although this event had ecclesiastical content, it aroused in the painted characters many feelings—pain, suffering, exaltation, fear, hope and more. It was Leonardo da Vinci (1452-1519),[11] himself a fair mathematician and a great anatomist, and Albrecht Dürer (1471-1528), a master of bodily measurements as well as of geometry, who enunciated nearly all major principles by which later perspective, coloring, and physical characterizing were practiced for 350 years. Neither man was so devoted to any one set of mathematical figures that he strained the body to fit it to them, to the exclusion of others. Once a fitting was accomplished he turned to other relations to lay out either ideal, or average, or idiosyncratic and even deformed figures or faces.

Leonardo's notebooks contain observations, randomly arranged, on human proportions, most of them in the fully erect body; other observations are on changes taking place as a result of altered posture. A man, he says, who kneels down lessens his height by one-fourth. Again, if the hand is held and its five fingers are extended, keeping them close together, it will be as wide as the maximum width of the foot. The distance of the arm from the elbow to the hand never increases when bent or straightened.

Of somewhat this general bearing are the textbooks by Dürer,[12] who not only made hundreds of measurements on twenty-six body types that he discriminated, but also attempted to find mathematical structures for them. His books are replete with drawings of men, women, and children as graphed by squares, circles and their arcs, and by cubes. He invented a system of grids which he could progressively modify as if they were drawn on rubber sheeting, which first accepted a normal face and then through various stretchings altered it into other types, unusual or grotesque. But Dürer was a genius who well knew that measuring in itself was quite as insufficient as were a priori mathematical rules. Accordingly, he altered both for the sake of his creative paintings. To find a beautiful face and figure he thought required picking and choosing the best parts from among a host of samples, then putting those together to form a whole having outlines indeterminable entirely by ruler and compass.

Leonardo and Dürer marked the culmination of efforts to harmonize the findings of anatomy and mathematics. After them, artists tended to stress one science at the expense of the other. Later in the sixteenth century painters could display the figure with even greater fidelity to bones, muscles, and skin tones, but the poses became more contrived and contorted in epochs termed Mannerist, Baroque, and Rococo.[13]

Meanwhile, the visual and medical arts became less intimate with each other, though not altogether estranged. Medical illustration passed from the great stylistic innovators of the Renaissance into the hands of highly expert draftsmen fully conscious of their obligations not to ideal proportions or esthetic effects but to facts observed in clinics and on dissection tables. The epochal work of Andreas Vesalius (1514-1564), published a mere fifteen years after the death of Dürer, shows the beginnings of this new turn. In his *On the Structure of the Human Body* there is little talk of the arithmetic of proportion, regardless of the accuracy of the drawings.[14] The occasional bizarre poses and gestures are flourishes, so to speak, without special anatomical or artistic value, but they never detract from the extraordinary detail exhibited in plate after plate. In Henry Gray's famous and still-used *Anatomy of the Human Body* three centuries later, proportions are not discussed explicitly, but nevertheless are faithfully drawn on every page.[15] Gray's book and others of the kind make little pretext of being works of art. From time to time, however, distinguished painters have treated medical subjects, though most have dealt not so much with anatomy as with the social setting of medicine. Rembrandt (1606-1669) was respectful of practitioners in his two paintings of autopsies, one of which, *The Anatomy Lesson of Dr. Nicholaas Tulp,* is an extremely popular work. The American realistic artist Thomas Eakins (1844-1916) was something of an anatomist himself, and frequently reproduced pictures are *Professor Gross* and *The Agnew Clinic* in Philadelphia. Less respectful are many satirical sketches by cartoonists and serious painters throughout the centuries, giving evidence of deep-seated hostilities between the medical profession and at least a part of the general public.[16]

We return to the narrative. Seventeenth-century Baroque and Rococo painters learned how to work on curved walls and oddly-shaped domes where the perspectives are unusual, requiring much ingenuity to maintain the illusion of life-like bodies. When there was little more to be learned there, painters began to explore other subject matters: the common interiors of houses, with or without their occupants, piles of food and their containers, scenes of the city, seascapes and especially landscapes. These poured forth from studios, making the human figure and its celestial counterparts less central in the eighteenth and early nineteenth centuries. It remained for Gustave Courbet (1819-1877), Camille Corot (1796-1875), Edouard Manet (1832-1883), Paul Cézanne (1839-1906), and some contemporaries to restore high seriousness and a fresh approach. Though they struggled with proportions, they cared less for the body's exact measurements, looking upon it rather as suggesting a new artistic form—something obeying laws

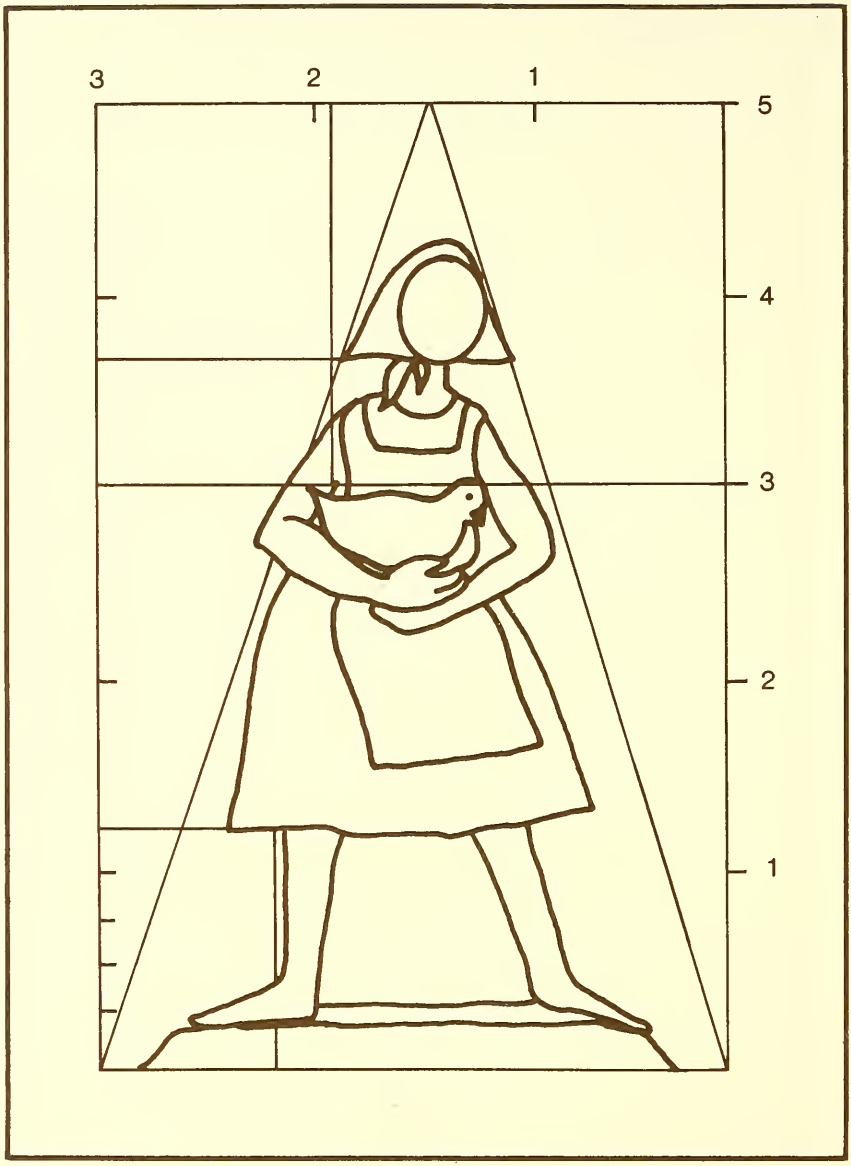
only coincidentally the same as natural laws.[17] This tendency is most clearly expressed in Cézanne's famous remark that he wished to resolve nature into cylinders, spheres, and cones. It was a short step from this to the Cubists and even more abstract artists of the later twentieth century. Cézanne never showed his men and women as composed of explicit spheres or cylinders, but one senses that their great painterly strength lies in an awareness that geometry underlies nature.

A different trend appears with the masterworks of Vincent Van Gogh (1853-1890), who saw the body not as undergirded with formal shapes but as infused with powerful emotions often in collision with one another. To strengthen this impression he introduced distortions of perspective and shading that would emphasize the psychological values he wished to impart. A reclusive American, Albert Pinkham Ryder (1847-1917), sought to engulf his characters in ghostly landscapes, often vaguely moonlit, all expressive of a withdrawal from commonplace experience. His faces, when large enough to be made out clearly, are roughly sketched in, but the feeling of a curious mixture of detachment and dread is evident enough. Georges Seurat (1859-1891), a Parisian, conceived a different assimilation of figures, many of them stiff and statuesque while promenading, or even while dancing or watching a circus. Live beings and environment alike are built up of thousands of dots of pure color and closely juxtaposed to produce an additive effect when viewed from about six feet away.[18] In Seurat's last four or five major works the figure is not so much something differentiated from its surroundings as it is their condensation, the intensifying of the optical qualities of the backgrounds.

In all these artist's most typical paintings, bodily proportions (but not colors and textures) approximated those of ordinary men and women, in average communities of the western world. It should be worth while to see how these norms were both destroyed and preserved in the decades to come.

MORE EXACT PAINTING IN THE TWENTIETH CENTURY

As our century opened, emphasis shifted once again to novel techniques and conceptions of human beings, their universe and its values. In consequence, increasingly radical approaches were tried, and movements in painting became far more varied and divided than ever before. Many viewers, repelled by works which by standards of the past are either outrageous or childish, think it



Rough sketch, with approximations of the Golden Section. Even if the drawing is made with these sections in mind, the conformity is incomplete—for example, the hands do not lie on any significant line, and the triangle formed by the bisection of the top line (a frequent practice in applying the theory) has little to do with the skirt, although it does frame the less important headdress.

purposeless to speak at all of the human figure in today's art. If these people do not summarily dismiss all modern paintings, at least they look askance at the treatment they and their fellows suffer on canvas.[19]

This bewilderment cannot and should not be altogether dispelled, but one can make distinctions. Hence we come now to a rough-and-ready classification of some twentieth-century types as samples of "schools" in Western Europe and the United States. If artists are named as adhering to a certain style, this does not mean that they retain it rigidly, using identical principles and techniques. Indeed, were they to undergo no transitions, they almost certainly would never become first-class painters. They may be Cubists at one time, then in others invent or adopt another mode. There are gradients in art as in living forms, but I must ignore most of these in my present classification . Types are made clearer in this way, though not truer to fact. It is necessary to fall back on historical labelings, though many, such as "Les Fauves" and "Cubism," are quite misleading. But the designation of an artist under any traditional title or fresh one, for that matter, is hazardous.[19] The present classification is made in terms only of the way the human body is rendered, and disregards other highly pertinent considerations which would give cross-classifications. Nearly all the distinctions will be two-part in character, but sometimes they are to be interpreted less sharply than their titles suggest, and are mostly comparative.

Those who paint real objects are, of course, set off from others who feel that art should never try to copy nature. Those who paint real objects either concern themselves with human figures to some degree or they do not, preferring to use landscapes, utensils, motorcycles, car wrecks, dogs, skyscrapers, playing cards, clothespins—almost anything not human—as their objects. This latter group, together with most of the so-called nonobjective painters, can be left to one side here in favor of those who do include human figures.

Artists who include human figures in their work can be divided into more Exact and Inexact, the first group being those employing a sharp painterly line, careful shading, and a fair number of natural proportions of parts of the body. Identification of an individual, in the case of a portrait, would not be a mere guess. Where the entire body is not represented, as in a portrait head or bust, it is because of limitations accorded to the work as a total composition, but proportions and shading remain in all that is rendered.

A first subdivision of Exact painters suggests itself because some of them represent selected parts of the body very carefully, and in detail, somehow altering the body as a whole, so that a single hand becomes an appendage to a derrick, surrounded by staring eyes, while others treat the whole body as if sacrosanct, given by nature.

The painters who respect parts of the body but who often, in letting their imaginations run wild, play havoc with its wholeness, generally have been members of the *Surrealist* group, which had its rise in the early Twenties in Paris, at first as a literary coterie.[20] The Surrealist joins images factually incompatible, and the associations of kinds of objects are abrupt, there being little familiar rationale for the connections.

Realistic adherents of the Surrealist movement include Salvador Dali (1904-) as the best-known in America, partly because of his acute sense of public relations, Max Ernst (1891-1976),and Rene Magritte (1898-1967). These men could render the body very precisely, indeed as precisely as any full-fledged Realist, but they generally join its parts to quite inappropriate organs or to animals or house furnishings or the like. Dali's *Portrait of the Artist Observing his Wife Gala Metamorphose into a Colonnade and Stairs* is one of the best of these works, but many others by him are strained, their absurdity is less fun, less spontaneous. Magritte paints a female torso which is at the same time a man's face—this is not intended as latrine art but aims at something more fundamental, though all attempts to define it are puzzling. The customary Surrealist claim was that the selection of images stems from the subconscious. Freud, who corresponded with members of the school for a time, rejected this altogether.

Other adherents of the movement have made little effort to portray bodies or their parts naturalistically. This subgroup is exemplified by the Spaniard Joan Mirō (1893-1983), the Frenchman Marcel Duchamp (1887-1968), and Paul Klee (1879-1940), the latter a Swiss painter with little of nature in his canvases, however much symbolic associations are allowed to enter. The lines, surfaces, etc. are significant only if viewers connect them with concepts beyond what is perceivable through our senses.

We come now to the Realists, loosely called.[21] To understand their craft requires clarification of some philosophical points. The resolute attempt to render nature as it really appears comes fairly late in the cycle of any civilization, for the effort to decorate or to symbolize exhibits itself much earlier. One reason is that there are many stages interposed between what exists physically, the initial object of a realistic painting or sculpture, and the final result, the

work of art. We begin with the unperceived but essentially perceivable object, be it living or inanimate. This may be assumed to be real, not imaginary—a reality independent of the perceiver.

The second stage involves the viewer, who does much to alter what is out there by turning variations in light-wave frequencies into hues and intensities of colors.[22] Whether this report of the senses is "true" depends, of course, upon definitions. At any rate, the perceptions thus gained are common property of all human beings.

Third, the artist shares this with viewers, but in addition he has, because of special sharpness of perceptual powers, imagination, emotions, or reason, the ability to make whatever use of the sensory data he sees fit, adhering closely or loosely to the configurations presented by his senses. If his vision is normal, free of astigmatism, anisokonia and colorblindness, then his exploitation of the sensations is dictated almost entirely by taste and skill. But—and this is fourth—objects are also modified in appearance by perspective, both as seen and (sometimes quite differently) as painted. Nature deceives in this way, and the artist may follow suit, not only in proportions but in copying the shading, color shifts, and atmospheric haze.[23] If his system of spatial relations does not parallel our vision, it is because he wishes us to think he has created something better or at least more suited to his needs.

"Realism" is thus a confusing appellation if it is not made clear at what stage it is being applied. The thing itself, not as it is observed, seems to be the primary target of art styles called realistic, but after that all the other stages just distinguished can be invoked to defend use of the term.

Primary Realists are those most interested in the object as it exists in itself, and as it is seen. They may call in mathematics to help imitate that object, using numbers and figures dogmatically or empirically as the case may be. Realism need not stop here, for many painters take passion seriously, altering representations to show access of feeling. The living body then becomes an index to the psyche or the social setting, a lodgment for feelings or pressures from outside. When it is, I call the artists Secondary Realists. The Romantic Realists among them use many of the same proportions as do the Primary; the Expressionists as a rule do not, although many of their broad and jagged lines are difficult to measure, hence the mathematics of proportion must be temporarily put to one side.

Max Ernst. Woman, Old Man and Flower *(1923-24). Oil on canvas, 38" x 51 1/4". (Photo courtesy of the collection, Museum of Modern Art, New York.) Ernst began his major career as a leading German participant in the*

DaDaist movement, but in the mid-20s he joined the Surrealists, remaining with them for many years. His interest in distorted forms, many of them rounded, eventually showed itself in his later devotion to sculpture.

Those *Primary Realists,* the Exact painters who use the whole body not as a mannikin enshrouding simple yet overpowering emotions, but as a biologically feasible entity in suitable surroundings, can again be subdivided. First there are the artists seeking to depict a moderate style of living, not much better and not much worse than the average of life as it has been experienced in civilized countries in periods of average prosperity and comparative peacefulness. Then there are the artists who make circumstances or characters significantly happier or sadder than this average. I call the first group the Impersonal or Detached Realists. The second group, the Responsive Realists, who are subdivided into the Romantic and the Tragic.

Consider the *Detached Realists.* There have been European and American artists who have given day-to-day renderings of human existence, and who have done so by developing unusual skills in determining proportions, colors and shadings. If they have used photography in their work it has been only to assist them in the real task of achieving a special artistic unity among the objects imitated. The final result has not been determined except as suggesting or perhaps verifying certain conformations. Edward Hopper (1882-1967) was an excellent recorder of the social scene without bias. His figures appear as ordinary men and women to American viewers, and his settings are much the same—a young man and his girl being served by a white-frocked cook in an all-night restaurant of no particular distinction, a movie usherette in a theatre of middle-class pretensions, a gas station somewhere on a highway, neither markedly flourishing nor delapidated. A painting which perhaps has the most painstaking rendering of a female figure, *A Woman in the Sun,* brings the upright stance, the musculature, the lively skin tones, and at the same time the loneliness (aided by the plain little room) into complete realization. Hopper's predecessors of the so-called Ashcan School and certain painters of a generation later accord their spectators a view of Main Street America, commonplace houses and storefronts, a few unimportant people gesturing in the most ordinary ways. There is, for example, Raphael Soyer (1899-), who in many portraits depicts his sitters, including himself and celebrated friends', as if quite average. In this connection one should also notice the earlier paintings of Isabel Bishop (1902-).

By and large the Realists use a camera, if at all, as a stimulus, not a crutch. Two groups, however, depend upon achieving photographic likenesses and are prone to employ as many mechanical aids as will make a very difficult skill, that of fooling the eye, a little more manageable.[24] This is not a universal practice among the Superrealists and the Pop Artists, but they do render objects

common in daily life with painstaking exactitude. The *Superrealists* are inclined to consider the objects without making any social or psychological evaluation,[25] while the *Pop Artists,* remaining as detached and unwilling to inject messages, look upon the object as something to spoof, to satirize by the very accuracy with which they render it.[26] The Superrealists by and large are less selective than other Realists, and their paintings seem to lack the compositional strategies and compulsions which enable viewers almost instinctively to know where the painting should end. The boundaries of most Superrealists works are fixed by the frame, nothing more.[27] In *Satin Doll* Richard McLean (1934-) draws a remarkably true-to-life girl on a horse, without bounding the picture by its organization, so that the work would be no more and no less complete if extended a foot or two, or contracted. One can hardly expect to go farther in offering a slice of life.

So much for the Detached Realists, who present objects as they seem to the uninvolved eye and mind. The *Responsive Realists,* on the other hand, are at pains to make us feel strong emotion stemming from the world depicted as happier or less happy than the ordinary. The *Romantic Realists* in a general way show persons slightly nobler, more spruced-up, more beautiful than the run of humanity, and moreover show them enjoying pleasant or at least favorable situations—environment never threatening, companionships not obligating, occupations unburdensome. A century ago John Singer Sargent (1856-1925) was one of the last original American painters to succeed in this task, though his technique is copied everywhere in academic portraits of the wealthy and powerful. A few of the paintings of poised, self-satisfied gentlemen and ladies of Eugene Speicher (1883-1962) answer to this description, as do the works of Leon Kroll, who painted attractive nudes in congenial forest glades, both of them cool but not remote. Perhaps the real progenitors of the Romantic Realist trend in our time were the German landscape artists of the nineteenth century, past masters at indicating *Sehnsucht* ("yearning") but also the *vogelfrei* ("free-as-a-bird") temperament.[28] They present hearty men and women usually trailed by several energetic but well-behaved children, all dressed for a merry outing, and backed by opulent landscapes—mainly snow-capped mountains gleaming in a noonday sun, sturdy forests, brooks, Alpine flowers and much else to make us love their life. These same artists paint lone young men brooding over a sparser but still picturesque landscape at dusk.

Among these Primary Responsive Realists are the *Tragic Realists.* The Danish painter Vilhelm Hammershoi (1864-1916), imposing, but a neglected man in this country, peoples his well-furnished but mournful interiors with moderately prosperous men and women

Edward Hopper. Night on the L Train *(1920). Etching, 187 x 201mm. (Photo courtesy of Art Institute of Chicago.) Hopper's paintings are realistic; their proportions, colors and textures are much as in life, though not photographically detailed. His etchings are necessarily looser but still convey the immediacy of ordinary occurrences in urban and rural America.*

portrayed with touching exactitude, who seem bored, wistful, isolated. His scenes are bathed in a dim light which points up this sadness; the air is oppressive, the light is a shortlived favor. This feeling is conveyed in some works of Andrew Wyeth (1917-), one of the most popular American men of art of the last three decades. In *Christina's World,* Wyeth depicts a congenital cripple resting awkwardly in a meadow and gazing upon a dreary, stark old homestead atop a bluff. Even though the sun is shining, intense loneliness pervades, futility which must be suffered yet faced with whatever courage can be mustered. A vision of the world far more bitter is that of Ivan L. Albright (1897-1983), whose works feature stony, disagreeable men and women ugly to the point of hideousness, bodies deplorably wrinkled with age and moral corruption. (Albright was commissioned to do the final dissolute, murderous portrait for the film, *The Picture of Dorian Gray.*) His characters gravitate to rooms containing dying fish or the paraphernalia of lives once good but now hateful.

Among most Primary Realists the theme is that human beings are in accord with their surroundings—they fit as naturally as possible, applying the standards of real life. In *Extended Realism,* on the other hand, such figures are out of accord. Here again we find two chief types, the first being the *Magic Realists,* in whose paintings the environment is inappropriate (from a naturalistic standpoint) in its very kind; the second, the *Dislocating Realists,* for whom the environment seems out of character because of its condition. The Magic Realists have never formed a cohesive group, but they adopt a use of figures treated as wholes as much as any Primary Realist would treat them, but juxtaposed, as the Surrealist would, with quite unexpected images and backgrounds: a man and an adjacent live fish, for instance, but with no water or other pictorial device to explain the juxtaposition; or a building fronted by a large butterfly.[29] (The Surrealist painter would no doubt make the butterfly become part of the building). Distortions of perspective abound, colors are modified at will and not because of lighting conditions, the composition is carefully tended throughout to make it a unity at the expense, it happens, of lifelikeness. *The Eternal City,* by Peter Blume (1906-), has a jack-in-the-box, its bald head carrying the face, seemingly carved rather than living, of Benito Mussolini with Roman ruins in the background. Such incongruity is clarified by reference to Italian politics. Magic Realism in this sense hovers close to symbolic art, for both have a firm rational ground, despite the particularities of the images of persons and their occupations. These are not visual puns concocted by Surrealists. Another exponent is Helen Lundeberg (1908-), whose figures are curiously complete, curiously incomplete, depending upon the observer's point of view. Artists such as

Lundeberg share a respect for the *general* integrity of the human figure and its connections with the spirit, and for created objects in space, but modify and simplify the form to eliminate nonessentials.

Some of the works of Ben Shahn (1899-1969), a man generally labeled a social realist, exemplify what I call Dislocating Realism. We see a little girl happily rolling her hoop down a street whose every wall and portico is loaded with the sense of destructiveness, having suffered a bombing; or children playing on a swing, as in *Liberation Day.* There is evident pleasure in their game, but the strangely-colored yard is in ruins, obviously one of the casualties of the war just over. Shahn's firm lines in these canvases are deliberate and naturally-proportioned, so he is not an Expressionist of the kind I shall describe later, but he espouses realistic motifs altered more forcibly to project a social message—Realism with a public conscience.

Opposite to Shahn in this regard is another American, Jack Levine (1915-), who puts mean and depraved men into stable and even elegant surroundings, as in *Gangster's Funeral,* in which ritual trappings are well-appointed, and only the faces and pudgy figures of the mourners are tawdry. One says of both Shahn's characters and those of Levine: "These people do not deserve their surroundings," but the meaning of this reverses from one to the other man.

MORE INEXACT PAINTERS OF THIS CENTURY

So much for the artists who give reasonably accurate renderings of the human figure and accompanying interiors or landscapes. A new, very large group differs from them at least in degree by aiming not so much at the accurate portrayal of face and figure as at visual responses or emotions called forth by subjects and settings. No customary name is common to all members of this loose association, and perhaps there should be none. My label for them—*Inexact*—may seem unnecessarily pejorative, yet most of their typical works do not often resemble live earthlings. The artists can be lumped together negatively by saying that they rarely use well-defined lines to bound surfaces, or that their surfaces do not bound volumes. Consequently, the careful rendering of human proportions is difficult, and the "reading" of these paintings as if they offered a clue to such proportions is so tricky as to be mere speculation.

Amedeo Modigliani. Anna Zborowska *(1917). Oil on canvas, 51¼"x32". (Photo courtesy of the collection, Museum of Modern Art, New York. Lillie P. Bliss Collection.) Modigliani's mature works are strong images of the persons in his Parisian world, attenuated and infused by his inner compulsions. The forms are lightly modelled with color rather more in service to the strength of line than as an end in itself.*

The earlier distinction between Detached and Responsive painting can again be invoked, but here the two words are differently applied. In the *Detached Inexact* group, there is little effort to impress on viewers that the world is really happy or sad. Viewers can make of the images what they wish—the work may be charged with emotion, but that emotion is mixed, ambiguous. Exact Responsive painters give their work a cheerful cast almost entirely because of the figures and their surroundings and activities, whereas *Responsive Inexact* painters convey either gaiety or gloom by their very brushwork. Some members of this latter grouping may represent dismal subjects, true enough, but almost invariably in a style whose brushstrokes convey terror, anger, or extreme futility and woe.

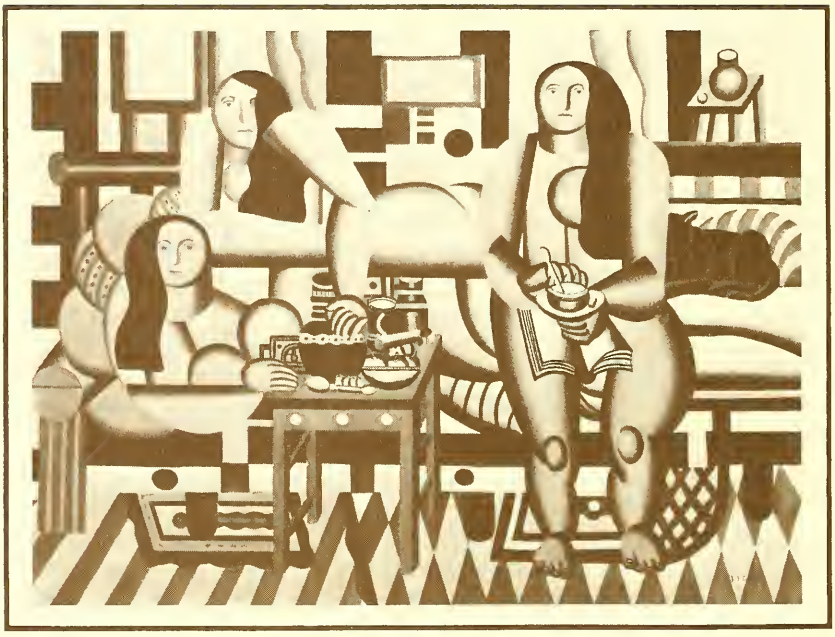
The Detached painters can be subdivided into those who deal with the entire figure and those who fragment it. No name exists for either of these subdivisions, but within the latter there are plenty of well-recognized characterizations. Some artists leaving the figure as a unity keep it rounded, while others flatten all or a significant portion. The so-called *Post-Impressionists,* one or two of them excepted, rounded the figure. They were a varied lot, who rarely knew each other and certainly never subscribed to a common creed. Their two points in common were, first, that they wished to restore the solid structures removed by Claude Monet (1840-1926) and other *Impressionists,*[30] and second, that they left undecided whether their artistic world was a happier or a sadder place than the realm of everyday life. Henri de Toulouse-Lautrec (1864-1901) strokes the canvas vigorously, depicting men or women in some activity, giving a vibrancy which the placid Impressionist works had lacked. His figures are slightly awkward, as one sees in his portrait of the dancer Jane Avril, they are slightly distorted in limbs, but the fullness is preserved by just enough shading to make them credible and human. Another in this assortment is the great Vincent Van Gogh, (1853-1890), who resolutely sought to render his perceptions of sunflowers, countryside, interiors, and his friends with extraordinary vividness, yet without (until late in his too-brief career) making them appear hostile and frightening. His people are cheerless and hardworking rather than haunted or haunting. James Ensor (1860-1949), a Belgian whose best work was approximately contemporary with Van Gogh's, frequently painted men and women harsh and scary in visage and evidently untrustworthy in their natures, for they are heavily masked, but are placed in ordinary circumstances, mainly city streets, as in his best-known work, *Entry of Christ into Brussels.* An important successor to the Impréssionists was Paul Gauguin (1848-1903), in whose late work, done in Tahiti, there is puzzling impassivity in the natives as well as in the brooding trees and various artifacts.

His young men and women have dour faces and often lumpy figures, rendered with an odd mixture of roundness and flatness because part is shaded, part not. They are glum, pensive, as if waiting patiently for a word that their gods have prepared some strange but perhaps not calamitous fate for them.[31]

Other painters dealing with the whole figure but who regularly flatten it were Les Fauves, "The Wild Beasts" (as a hostile critic termed them). Their leader for a time, Henri Matisse (1869-1954), has many expressionless dancing or picnicking men and women. The darker colors of Gauguin are gone, and Matisse often has great splashes of raw pink or light blue.[32] His dancers show little solidity and appear often as if cut from cardboard. The movement he suggests is not associated with active musculature, but is simply in the gestures we see almost in silhouette.

We pass to those Detached artists fragmenting the figure, but who, unlike the Surrealists, were highly inexact in rendering its parts naturalistically. Of these again there are two kinds. *Cubists,* such as Georges Braque (1882-1963), Robert Delaunay (1885-1941), and Pablo Picasso (1881-1973),[33] rearranged the body though offering a discontinuous outline of it as a whole, at the same time suppressing some portions and modifying those retained to render them as if planes—not cubes. The muted colors of what is called Analytical Cubism (1907-1911) and the later, transitional Collage Cubism avoid reporting of normal visual experience in any literal way. The only vestige of the body remaining besides selected features such as an incomplete face or hand or leg is the general structure of the body as a whole. The head, if there is one, is at the top of the figure, the feet, if any, are at the base. The same is true of the third stage, Synthetic Cubism, in the 1920s, in which the figures become a trifle more coherent in outline and inclusion of parts but so variegated that the clashing colors effect a breaking up of figures into disparate components. The earlier stages of Cubism were introduced with talk of geometry. So frankly regular were many components of the images, so flattened yet separated by an apparent thin space, that they did bear a passing resemblance to diagrams in Euclid's *Elements.* Cubism never achieved a consistent geometrical theory, despite occasional claims by Picasso and others, but at the same time the biomorphic aspects of the body were pretty well destroyed.

Another of the Cubists was Fernand Lēger, whose art shows a double reduction: of human figures to machine-like shapes only, and of those machines to simple cylinders, rods, cones and bounded planes having no more than decorative colors. It is a grim industrial world that Lēger forces upon us, but its grimmest aspect



Fernand Lēger. Three Women *(1921). Oil on canvas, 6'1/4"x8'3". (Photo courtesy of the collection, Museum of Modern Art, New York. Mrs. Simon Guggenheim Fund.) Lēger, ordinarily considered a Cubist, reduces his personages to the cylinders, cones, etc., of the geometer. He often employs bright blues and reds to make them more vivid. His world is a mechanical one, devoid of feeling.*

is its very impersonality. The men-machines and women-machines suffer not at all, nor do they evince satisfaction; it is alienating, cold science-fiction emblazoned upon a well-framed rectangle.

A reduction not to a geometry but to a visually imposed kinetics is found in a group of Italian painters formed in 1909, no more than a couple of years after the first Cubist works, and lasting for another five. These were the *Futurists,* of whom Giacomo Balla (1871-1958) and Umberto Boccione (1882-1916) were the most gifted, the latter being the main spokesman. The Futurists were interested not at all in static form, and took steps to break up into component stages its natural motions, so that they became positions in space. A woman walking her poodle becomes a succession of feet along a path, the dog's legs being multiplied as are hers, and the swings of the chain recorded as it moves through its own arcs. Their precedent was the photographic series by Edward Muybridge (1830-1904),[34] a Britisher working in America in the late nineteenth century. Muybridge's row of cameras, tripped in rapid succession, recorded the positions of limbs of horses and other creatures walking, running or leaping. The Futurists condensed what would have required multiple prints onto a single canvas.

For a period just after World War I, the coterie following Cubism and Futurism in Paris took the name DaDa (a kind of hobbyhorse), claiming to overthrow virtually all rational aims and images. DaDa, ran the slogan of the founder, begins in disgust. Marcel Duchamp, a DaDaist as much as anything else, had already painted his two versions of the Cubist *Nude Descending a Staircase* (1911 and 1912) but now lent his talents to depicting human beings as if fragile machines, as in *The Bride,* which shows a semblance of the human figure but breaks it into parts obviously more likely to find a home in automobiles—axles, fenders, and more. His *The Bride Stripped Bare by Her Bachelors, Even,* a large unfinished creation that occupied Duchamp over many years, retains not even the outlines of a woman, but consists again of an array of machinelike parts, connected though in no sense a machine. The Spaniard Francis Picabia (1879-1953) did make images more consistently like functional mechanical units, apparently believing that all of the traits of the human being were representable in these assemblies. His textures and shadings are far more subtle than those of the Cubists or other DaDaists, but the overall lesson is that man and his creations of well-oiled metal are indistinguishable.

The last large group to be considered here are the *Responsive Inexact* artists. Notions of happiness and misery enter, this time more obtrusively than anywhere else in this account, for there are probably no painters more sunny and optimistic than the Impressionists, none more gloomy than the Expressionists.

The heyday of the Impressionists was little more than two decades before the opening of the twentieth century, but a few remarks about them are in order. Much of later art stemmed from their experiments—the discarding of Renaissance *chiaroscuro* (sharp contrasts of light and shade) and of *sfumato* (the "fumed" effects first made prominent in Leonardo's rounded forms). The Impressionists heightened their tonalities by stressing the effects of open-air sunlight, and they sought to capture fleeting rather than permanent appearances.[35] There are pieces by Monet and by Camille Pissarro (1830-1903), and Auguste Renoir (1841-1919), which bear many earmarks of the more exact paintings described earlier. Chiefly, however, it would be difficult to reconstruct any canon of measures from their works. Renoir, for instance, often leaves his viewers in doubt concerning width of shoulders relative to height of face or length of forearm, for all these are rendered in soft lines making it necessary to guess at their boundaries.[36]

Broadly speaking, the Impressionists (who were so named, unfavorably, by a critic) saw life confidently. Their world was as comfortable, pleasant, unreflective and cheerful as their colors were clear, light in hue, yet well blended. At the opposite extreme are the German *Expressionists,* who in the narrow and proper sense of the name consisted of two groups flourishing between 1905 and 1914, in Dresden and Munich respectively.[37] They were strongly influenced by the harsh color contrasts of Les Fauves, and possibly also by the wraithlike tragic figures of the Norwegian Edvard Munch (1863-1944), whose muted colors and rough brushstrokes conjured up images of extreme suffering, as in *The Sick Room,* and of extreme terror mixed with even more terrible indifference of passersby on a bridge, as in *The Cry.*

Members of the Dresden school called themselves *Die Brücke* (The Bridge), and Karl Schmidt-Rottluf (1884-1976), Ludwig Kirchner (1880-1938), August Macke (1887-1914) and others were prominent. They sought to free art—and their own souls—by ignoring traditions of perspective, color theory, *chiaroscuro,* and most other technical devices so hard-won in earlier centuries. They wielded the brush almost savagely, reproducing figures rarely in living proportions, but suggestive of the most powerful, if negative, emotions. Cadaverous bodies supporting heads of woebegone aspect abound in *Die Brücke,* and the poses are often contorted. To be at

Käthe Kollwitz. Woman Clasping the Hand of Death *(1934). Lithograph, 458 x 293mm. (Photo courtesy of Art Institute of Chicago . Gift of Mr. and Mrs. Emil Eitel.) Nearly all of Kollwitz' work, which is properly called German Expressionist, depicts the human face and figure in the grip of the intense suffering or quiet despair which is the consequence of war and poverty.*

rest, however, means to be abject, exhausted, perhaps dead. Generally *Der Blaue Reiter* (The Blue Rider), a group based in Munich, was less gloomy, but more experimental. Franz Marc (1880-1916) depicted animals in highly stylized, simplified fashion—horses and foxes almost streamlined; and Wassily Kandinsky (1866-1944) and Gabriele Munter just before World War I often departed from all natural bodies as subjects, in favor of freely-drawn but highly symbolic associations of purely visual passages, lines curved and straight, patches of color, with little or no suggestion of a third dimension, hence no need for modeling. Kandinsky became the intellectual leader and artistic exemplar of most of the abstract artists—the so-called non-objective groups who followed after.[38] Many of these artists later settled into habits and dogmas which reflected what Kandinsky had had to discover for himself in fresh adventures. His freedom from the object elevated his spirit, but for many of his successors, who shared few if any of his mystical convictions, freedom from the object settled into a mere rule of practice.[39]

Another artist, the wife of a physician to the poor in Berlin, was the wonderfully gifted Käthe Kollwitz (1867-1945), whose stark figures and haunted faces of the down-and-out, the frightened and sick of war-torn Germany cannot but have a universal impact. Her medium was ordinarily charcoal, her broad line was confidently-placed but rarely sharp, and the suffering that she portrayed was, unlike that of so many of *Die Brücke's* effects, unselfconscious.

Painters outside Germany have shown strong Expressionist tendencies. Very few works by Picasso have ever had principal subjects other than human faces and figures, modified and tormented as they might be, as if by a vigorous but unscrupulous surgeon. The famous *Guernica* of 1940 does furnish a background, as well as the men and women, living or dead, whole or dismembered, who appear to be in a peasant hut or barn graced with a single dangling electric bulb. Picasso's aim was to present the atrocities of war perpetrated upon the innocent, but quite differently from the exact painters showing every weapon and wound, all the bullets and blood.[40]

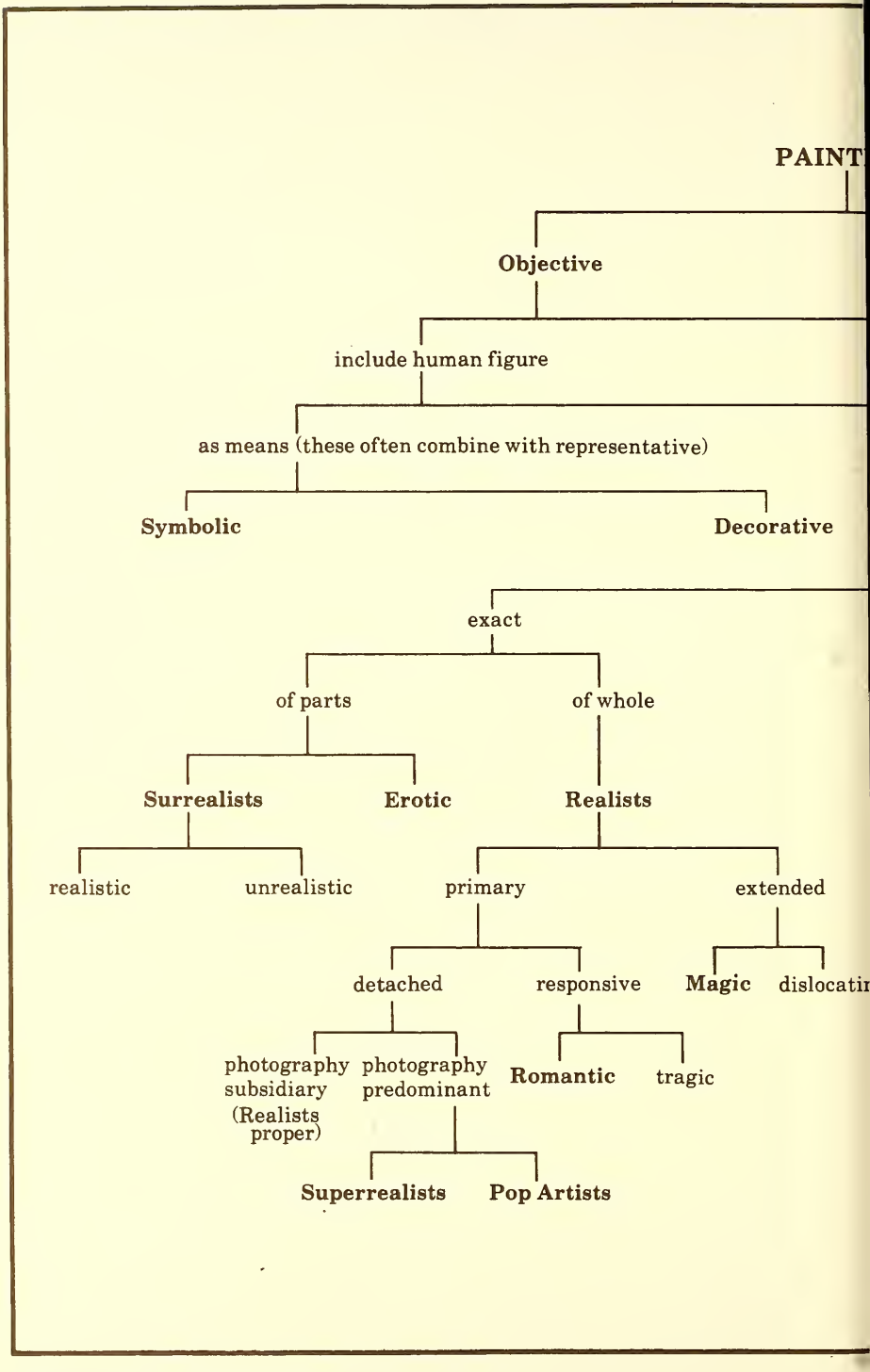
The most original Expressionist in England has doubtless been Francis Bacon (1910-). His hard edges are usually reserved for backgrounds; his figures, especially his faces, are often muffled to the point of unintelligibility. There are many poses, frequently betokening great displeasure or even agonizing pain. The cause of pain is never hinted, nor indeed do viewers know whether there *is* a cause.

The enigmatic Italian, Giorgio de Chirico (1888-1978), was more or less Surrealist in affiliations from about 1912 to 1918, the years of his great works, but his gloom and foreboding would mark him as a kind of Expressionist. His masterpieces, such as *Melancholy and Mystery of a Street,* picture empty city vistas, done in flat bright colors contrasted with heavy darks, sometimes with human figures walking or playing alone, sometimes with figures that on closer inspection turn out to be dumb mannikins, faceless or nearly so, stark against the even starker backdrop of a forlorn old town. The lines are usually crisp, there are no slashing brushmarks, but the perspective is multiply-based and strange.

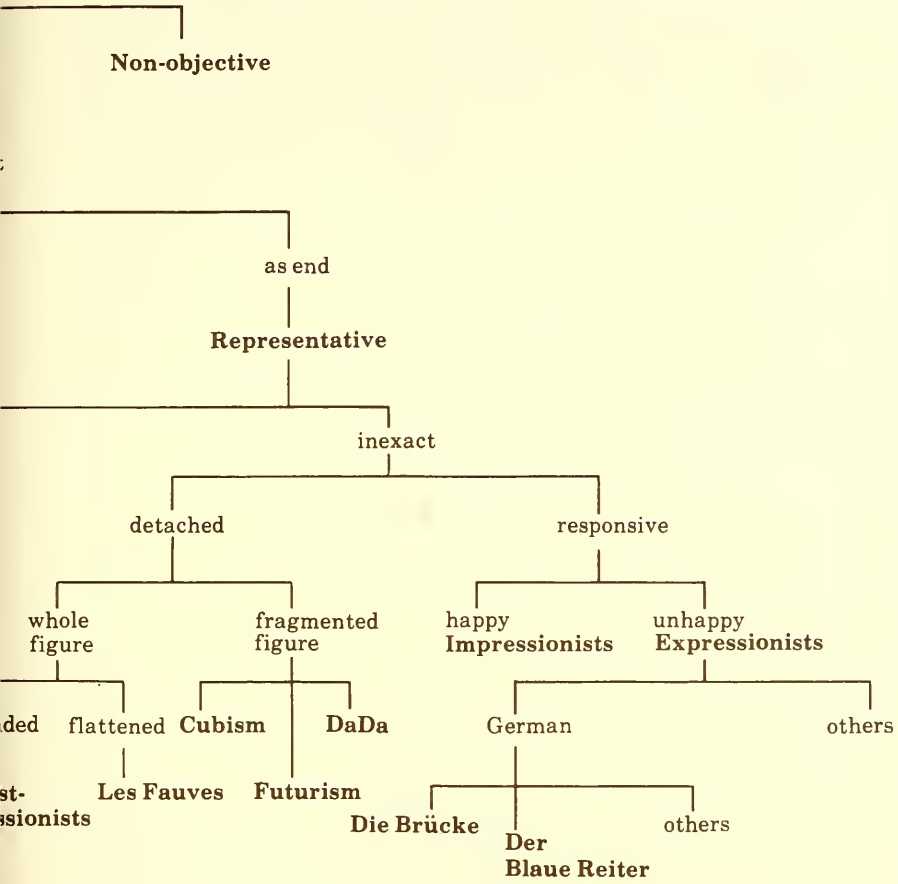
A comparatively cohesive group calling themselves the *Abstract Expressionists* or sometimes the New York School, or Action Painters, joined together in the belief that paintings neither represented nor symbolized anything beyond the gestures of the artist in covering his canvas.[41] The thick *impasto* brushing done with implements often three or four inches wide and their decisive sweeps across large surfaces, seem to illustrate anger more than any other emotion.[42] This is best corroborated by the few paintings containing suggestions of human figures in the typical, mature work of any of these artists, the series of *Women* by Willem de Kooning (1904-) being best known. By any older standards, these works are not only crudely sketched, but the figures themselves are made raw, glaring, despicable harridans, lacking any vestige of the more gracious, decent qualities that showed at least traces in the German Expressionists. It may well be that de Kooning seeks to characterize much of modern life, but it is a limited characterization at best, and there is a monotony in his denigration of female emotion and form.

THE ARTS OF MEDICINE AND PAINTING IN TANDEM

It is time to look for some parallels between the history of painting and that of the medical arts which, we implied earlier, have not been far apart in much of the long history of civilization. Plato, writing in the fourth century B.C., named the two arts which sought for the improvement though not necessarily the pleasure of the human body: medicine and gymnastic training. He also listed as visual arts painting, sculpture, architecture, pottery, and weaving, the last three being more crafts than art to his mind. In both categories there has been an exponential increase in the kinds of workers since Plato. Not counting quacks, today's list of medical and paramedical experts would fill a good-sized volume, with



Tabular summary of the dichotomies.


Non-objective
as end
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inexact
detached
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whole figure
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happy Impressionists
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Die Brücke
others
Der Blaue Reiter

nurses, physiologists, bacteriologists, psychiatrists, and others abounding in thousands. The increase at first was slow; and the history of medical theory and practice, from Hippocrates a half-century before Plato to the late sixteenth, showed not much significant evolution. Since that time, however, the changes have been staggering, with quantum leaps coming ever more rapidly. Much though not quite the same has been true in the visual arts. Throughout whole centuries of antiquity and of the Middle Ages and well into the Early Renaissance, the human figure was presented in fairly uniform ways. In the so-called High Renaissance, beginning with the late works of Leonardo da Vinci, the great madonnas and secular personages of Raphael, and the prodigious ceiling and murals of Michelangelo, far more varied postures, gestures, and treatments of color and texture were introduced. After long use of the new techniques, the mid-nineteenth century returned to more straightforward poses—persons sitting at tables, resting on sofas, enjoying seashore breezes. The twentieth century has seen "progress," highly-differentiated artistic departures finally coming to rest in the total abolishing of all recognizable features and figures.[43] Yet simultaneously we find an unprecedented and vigorous search for illusionistic fidelity, which complicates any fairly accurate classification of contemporary art. Keeping pace with this complication of styles is the new profusion of skills ancillary to the painter: that of the paint chemist, the expert in fabrics, lighting engineer, again in a long and ever-widening list.

Intertwining of medicine and visual arts has been less evident, however, in recent centuries. In the ancient and medieval world, artists and doctors looked chiefly to their predecessors rather than to facts lying at hand and ready to be uncovered; tradition was the powerful force. In the Renaissance for a time, doctors often found themselves outstripped by artists in their grasp of anatomy, but by the seventeenth century they had fully caught up. Since then they have been far in the vanguard of anatomical inquiry, using draftsmen mainly as helpers to render literally the intricate tissues and organs. With the advent of the camera by the mid-nineteenth century, painters were no longer obliged to execute portrait faces and figures, much less parts of cadavers. Free, then, to pursue their pictorial interests in other directions, they often sought novel effects of composition, perspective, color, and texture. For these reasons the old alliance between medical and visual arts showed signs of strain, and then rift. Fortunately this has not meant that physicians could no longer enjoy paintings, or that artists would not consult doctors.

Meanwhile, as we think of the distortions, mutilations, and outright dismemberments which the body has suffered in paintings of the past eighty years, we realize what vicissitudes it has undergone. Les Fauves, the Expressionists, Cubists, Surrealists, and indeed every other group except the Realists and their off-shoots have tampered with it as a living, functional, well-favored entity. On the other hand, the literal copying of nature is scarcely the best way to communicate insights, esthetic or moral, regarding an object of any sort. If the body is considered not merely as it appears to the eye but rather as it rests in its proper context, namely the whole nature of humankind, then we must admit that our century has been a time for putting this nature in new—though often unflattering—lights. But here again medicine and art may be rejoined, for the discipline of medical science constantly reaffirms, and the artists should relearn, that the body exists not alone but is welded to the spirit, thus forming a coherent and worthy whole.

NOTES

1. For brevity's sake, all but a few references to books on individual artists will be omitted, but it is safe to say that virtually every painter mentioned in this essay has at least one entire book devoted to his or her work; many of them have their output studied, criticized, catalogued, and reproduced in full color in several volumes. The general history is clearly presented in H. W. Janson, *History of Art* (Englewood Cliffs N.J.: Prentice-Hall, 1963), and as well in Helen Gardner, *Art Through the Ages,* revised by Horst de la Croix and Richard G. Tansey (New York: Harcourt, Brace and World, 5th ed., 1970), likewise excellent.

2. The best reference source is *The Encyclopedia of World Art,* containing special and general articles. This work, in fifteen volumes plus a supplement (Rome and New York: McGraw-Hill, 1959-1982), is extraordinary for both its essays and its illustrations. See also Harold Osborne, ed., *The Oxford Companion to Art* (Oxford: University Press, 1970), a far shorter work but informative on most topics and persons. For the diversity of recent art see Bernard S. Myers, *Modern Art in the Making* (New York: McGraw-Hill, 1950), and Robert Hughes, *The Shock of the New* (New York: Knopf, 1981), the latter stressing social trends as background for the artistic. See also Hugh Adams, *Modern Painting* (New York: Mayflower, 1979); Fernand Hazen et al, eds., *Dictionary of Modern Painting,* Lawrence Samuelson et al, trans. (New York: Paris Book Center, 1956); also Harold Osborne, ed., *The Oxford Companion to Twentieth-Century Art* (New York: Oxford University Press, 1981). See also Eleanor Munro, *Originals: American Women Artists* (New York: Simon and Schuster, 1979), and Charlotte Streifer Rubinstein, *American Women Artists: From Early Indian Times to the Present* (New York: Avon, 1982).

3. Similar functions are discussed in Sir Kenneth Clark, *The Nude: A Study in Ideal Form* (Garden City, N.Y.: Doubleday, 1950); and Malcolm Cormack, *The Nude in Western Art* (New York: Dutton, 1976) contains fine reproductions and brief comments on later work. Margaret Walters, *The Nude Male: A New Perspective* (London: Paddington Press, 1978) covers much the same ground, but emphasizes psychological aspects.

4. One theorist who fails to recognize the differences between

nature and art is Herbert Spencer, in *Education: Intellectual, Moral, and Physical* (New York: D. Appleton, 1886). After demanding that "youths preparing for the practice of sculpture" must know anatomy, mechanics, and the laws of momentum, he goes on: "In painting, the necessity for scientific knowledge, empirical if not rational, is still more conspicuous.... Progress in painting implies increasing knowledge of how effects in Nature are produced. The most diligent observation, if not aided by science, fails to preserve from error." He attributed "grotesqueness" to Chinese pictures on the ground that they ignore linear and aerial perspective (pp. 76-77).

5. Erwin Panofsky, *Meaning in the Visual Arts: Papers in and on Art History* (Garden City, N.Y.: Doubleday, 1955), contains a very important essay on human proportions and the canons.

6. For the mathematics of painting see Jay Hambidge, *The Elements of Dynamic Symmetry* (New York: Brentano's, 1926), a very popular book; Michael Jacobs, *Art of Composition* (Garden City: Doubleday, 1930); Matila Ghyka, *The Geometry of Art and Life* (New York: Sheed and Ward, 1946). More elaborate is Charles Bouleau, *The Painter's Secret Geometry: A Study of Composition in Art,* Jonathan Griffin, trans. (New York: Harcourt, Brace and World, 1963). Bouleau diagrams all sorts of paintings, finding analogies in musical intervals and rhythms for the mathematical ratios involved.

7. Robert Beverly Hale and Terence Coyle, *Anatomy Lessons from the Great Masters* (New York: Watson-Guptill, 1977) is a thorough discussion of the anatomy of muscles, etc. which can be learned from painters of the Renaissance only. The authors assume that whatever followed in the fine arts made no further advances worth mentioning.

8. *Encyclopedia of World Art,* "Egyptian Art," "Human Figure," and "Proportion," all contain valuable accounts, as does Panofsky in *"Meaning in the Visual Arts,"* Chapter 2.

9. The dates, even approximate ones, of few Greek artists are known. Polyclitus is thought to have flourished about 425 B.C. We know little directly about classical Greek paintings, for they have been almost totally destroyed since their creation. Most current information is deduced from literary references and from the probably similar figurations on vases. See Panofsky in *Meaning in the Visual Arts,* pp. 64-67.

10. In the *Timaeus,* Plato conceives the cosmos as a living animal (33b-c) and the human race is a kind of imitation, made of inferior stuff, of that cosmos; the differences are stressed as well as the likenesses (41d-44a). See also Paul Edwards, ed., *The Encyclopedia of Philosophy,* 3 vols. (New York: Macmillian and Free Press, 1967), "Macrocosm and Microcosm."

11. Of the hundreds of books on Leonardo, the most important

for the English-speaking reader is probably Edward MacCurdy, ed. and trans., *Leonardo da Vinci Notebooks,* 2 vols. (New York: Reynal and Hitchcock, 1939), with much material clearly arranged and illustrated; see Ladislao Reti, ed., *Unknown Leonardo* (New York: McGraw-Hill, 1975), for essays by ten specialists with excellent illustrations. There are books on Leonardo's anatomical work by C. C. O'Malley and J. B. Saunders, James P. McMurrich, Elmer Belt, K. D. Keele. Many topics are treated in G. K. Plochmann, ed., *The Resources of Leonardo da Vinci* (Carbondale: Southern Illinois University, 1953).

12. Erwin Panofsky, *Albrecht Dürer,* 2 vols. (Princeton, N.J.: Princeton University Press, 2nd ed., 1945), an excellent survey. W. Kurth, ed., *The Complete Drawings of Albrecht Dürer* (New York: Dover, 1963). *Encyclopedia of World Art,* "Dürer, Albrecht."

13. Picking exact dates in art history is more difficult than in modern history of medical science because in the latter a fact or principle is enunciated and becomes amalgamated with many earlier discoveries, while art rarely shows this accumulation. Devices are tried, modified, tried again in different settings. To decide, for example, whether loose Impressionist techniques had been used before necessitates searching in subordinate parts of older paintings for "soft" brushstrokes rather than expecting to find them in entire canvases.

14. J.B. Saunders and Charles C. O'Malley, *The Illustrations from the Works of Andreas Vesalius* (Cleveland: World Publishing Co., 1950).

15. Originally illustrated by H.V. Carter and published in 1858 under the title *Anatomy, Descriptive and Surgical,* Gray's book has been revised and reprinted dozens of times. A work of anatomy useful to the artist is totally inadequate for the physician, and the reverse is almost as true. For contrasts between the two kinds, see Emily Blair Chewning, *Anatomy Illustrated* (New York: Simon and Schuster, 1979).

16. Carl Zigrosser, *Medicine and the Artist: 137 Great Prints Selected with Commentary* (New York: Dover, 3rd edition, 1970), prints many examples of this satirical attitude.

17. Lionello Venturi, *Cézanne* (New York: Rizzoli International, 1978); William Rubin, ed., *Cézanne: The Late Work* (New York: Museum of Modern Art, 1977). Both books show Cezanne's intense concern for depicting truthfully the ordinary man and woman, but following artistic principles of his own.

18. William Innes Homer, *Seurat and the Science of Painting* (Cambridge: M.I.T., 1964) discusses thoroughly Seurat's studies in the color theories of Newton, Young, Chevreul, Rood, etc. There are few illustrations. *Seurat,* with an essay by Roger Fry (London: Phaidon, 1965) reprints an appreciative study with many plates. *Dictionary of Scientific Biography,* a collection of fifteen volumes

edited by Charles Coulston Gillispie (New York: Scribner, 1979-80), contains articles on Chevreul and Ogden N. Rood of special interest in connection with Seurat's theories of color combinations as well as pointillism.

19. For ways many of the great artists think of themselves see Elizabeth Gilmore Holt, ed. *A Documentary History of Art,* 3 vols. (Garden City, N.Y.: Anchor, 1966); Herschel B. Chipp, *Theories of Modern Art: A Source Book by Artists and Critics* (Berkeley: University of California Press, 1968). A detailed chronological listing is in J.P. Hodin, *Modern Art and the Modern Mind* (Cleveland: Western Reserve University Press, 1972), pp. 335-361.

20. Georges Hugnet, *Fantastic Art, Dada, Surrealism,* Alfred H. Barr, Jr., ed. (New York: Simon and Schuster, 1946).

21. *The American Tradition of Realism,* Part II: *Paintings and Sculpture of the Twentieth Century* (New York: Kennedy Galleries, 1983); Mahonri Sharp Young, *American Realists: Homer to Hopper* (New York: Watson-Guptill, 1977).

22. The physics, psycho-physics, and psychology of color are treated clearly in Ralph M. Evans, *An Introduction to Color* (New York: Wiley, 1948). For other approaches see A.H. Munsell, *Munsell Book of Color, Defining, Explaining and Illustrating the Fundamental Characteristics of Color,* 2 vols. (Baltimore: Munsell Color Co., 1929); Roland Rood, *Color and Light in Painting,* G.L. Stout, ed. (New York: Columbia University Press, 1941); Maitland Graves, *The Art of Color and Design* (New York: McGraw-Hill, 1941); Egbert Jacobson, *Basic Color: An Interpretation of the Ostwald Color System* (Chicago: Paul Theobald, 1948); M. Minnaert, *The Nature of Light and Colour in the Open Air* (New York: Dover, 1954).

23. Religious fervor, erotic fantasy, despair, and so much more have entered into the making of works of art that only the unwary would seek to reduce the motives of artists to one chief urge. The Secondary Realists project their own feelings powerfully into their paintings and sculptures, so it is fair to say that what we see in their work is a guide not only to the emotions of the sitters but also to those of the artists as well.

24. Most of these artists employ photography in many stages of their labors; for instance, projectors to flash an image on the canvas, later to be copied by hand, or even light-sensitive canvas which accepts this image in its own chemicals and merely waits for the painter to accentuate them with oils or acrylics. These artists who render perspective and proportions with seemingly great skill, in point of fact need pay less attention to them, for the real art lies in selecting the proper lens to photograph a given scene. Oddly, the new style stems in good part from a tradition established by William Harnett, who at the turn of the century was painting old personal letters, pipes, feathers, bits of string, and similar objects with uncanny verisimilitude.

25. An excellent collection of Superrealist works is the catalogue *Real Really Real Superreal* (San Antonio: San Antonio Museum Association, 1981). See as well Alfred Frankenstein, *The Reality of Appearance: The Trompe L'oeil Tradition in American Painting* (New York: New York Graphic Society, 1970).

26. Lucy R. Lippard et al, *Pop Art* (New York: Praeger, 1966 and rprts.). Much poster art uses Pop devices—see *Images of an Era: The American Poster 1945-75* (Washington, D.C.: National Collection of Fine Arts, Smithsonian Institution, 1975).

27. Much the same holds true of most Pop Art pieces, as for example the silk-screen by Andy Warhol (1937-), depicting 200 *Campbell's Soup Cans* laid out in neat rows. Had these rows been longer or shorter, the composition would have been the same; the assumption is that the number of cans was determined by a well-proportioned wood frame.

28. Hubert Schräde, *Deutsche Maler der Romantik* (Koln: Schauberg, 1967). Among the painters who have executed works of this kind are Johann Anton Knoch, Carl Philipp Fohr, Ferdinand von Olivier, and others.

29. Even the most determined Realist will generally alter the "facts" of scenes. Studies of John Constable (1776-1837), the great English landscapist, show how he condensed vistas to suit his compositional needs and added or eliminated as occasion arose. (There are similar studies of Cézanne and many others). When Constable is finished, however, the trees seem naturally disposed by the water, the land has natural undulations, and no cyclopean eye or floating architecture hovers over the scene.

30. Editors of *Realités, Impressionism* (Secaucus, N.J.: Chartwell, 1971).

31. Suzanne Valadon learned much from the Post-Impressionists, for whom she often posed. See Jeanine Warnod, *Suzanne Valadon,* Shirley Jennings, trans. (New York: Cronin, 1981). She rounds the foreground figures, almost excessively at times, but flattens each background.

32. The poet and critic Charles Baudelaire (1821-1867) anticipated Les Fauves in their treatment of color when he asserted that he would like to see prairies red, rivers yellow, and trees blue. The beautiful, he added, is invariably bizarre. André Breton, the best-known spokesman for the Surrealists, echoes this when he says that nothing but the marvelous and the convulsive is beautiful.

33. Guy Habasque, *Cubism: Biographical and Critical Study,* Stuart Gilbert, trans. (Cleveland: World Publishing, 1959); *Georges Braque,* I. Mark Paris, trans. (New York: Abrams, 1980); Gustav Vriesen and Max Imdahl, *Robert Delaunay: Light and Color* (Maria Pelikan, trans., New York: Abrams, 1967). Alfred H. Barr, Jr., *Picasso: Fifty Years of his Art* (New York: The Museum of Modern

Art, 1946 and reprintings); Pierre Daix, *Picasso* (New York: Praeger, 1965), a biographical treatment with better plates than the foregoing; David Douglas Duncan, *Picasso's Picassos* (New York: Ballantine, rev. abr. ed., 1968), plates of the paintings which Picasso held back from the market.

34. The 781 plates comprising about 20,000 photographs for the original 1887 edition of Muybridge's *Animal Locomotion* have been reproduced by Dover Publications (1979) in three volumes. They resemble stroboscopic exposures but are easier to "read" because separated. In a sense, the Futurists recalled a medieval device, known as continuous representation, in which incidents separated in time but related in concept (for example, the many miracles of a saint) were all placed upon one painting surface.

35. The very distinguished paintings of Mary Cassatt (1844-1926) range between a modified Realism and a kind of Impressionism, but she was an independent, learning from both groups, adhering to neither.

36. These remarks are truer of Renoir's later works (1900-1919) than they are of his earlier ones, which were far more elegant and clearly painted, partly because he had not yet contracted arthritis. In the *Woman at the Fountain,* for instance, either the perspective is built on at least two conflicting systems, or the proportions are deliberately distorted, or the woman posing is a person almost deformed, or a little of all three. Most of these later pictures show women with unusually wide faces, dumpy figures, but done in a rough technique that makes it difficult to determine how much distortion has been introduced, *if* we are judging the work in terms of older canons.

37. The background of the Expressionists is well presented in Gottfried Lindemann, *History of German Art: Painting, Sculpture, Architecture,* Tessa Sayle, trans. (New York: Praeger, 1971); see further Bernard S. Myers, *The German Expressionists* (New York: Praeger, concise ed., 1966).

38. Hans K. Roethal and Jean K. Benjamin, *Kandinsky* (Oxford: Phaidon, 1979). Also see Kandinsky's most important statement, *The Art of Spiritual Harmony* (London: Constable, 1914).

39. A fuller history of the Expressionist tradition could not omit discussion of the Viennese painters. A remarkably insightful account is given in Carl E. Schorske, *Fin-de-Siēcle Vienna: Politics and Culture* (New York: Vintage, 1981). Gustav Klimt, Egon Schiele and Oskar Kokoschka are the best-known painters of this group. See Alessandra Comini, *Egon Schiele* (New York: Braziller, 1976). Paula Modersohn-Becker is another gifted independent Expressionist.

40. Rudolph Arnheim, *Picasso's Guernica* (Berkeley and Los Angeles: University of California Press, 1962). This very large painting was elaborately sketched in advance. Otto Abetz, Hitler's

plenipotentiary in France during World War II, upon seeing this powerful visual condemnation of war, asked Picasso: "Did you do this?" upon which the latter replied; "No, you did."

41. Thomas B. Hess, *Abstract Painting: Background and American Phase* (New York: Viking, 1951).

42. Just how much emotion is really expressed in such a painting is in doubt. Ad Reinhardt, a painter of this group and a clever spokesman, once said that expressing one's emotion in a work of art is "obscene." One of his most successful works was a very large canvas covered with a single shade of flat black, except that in one corner a glossier black showed itself in a small patch.

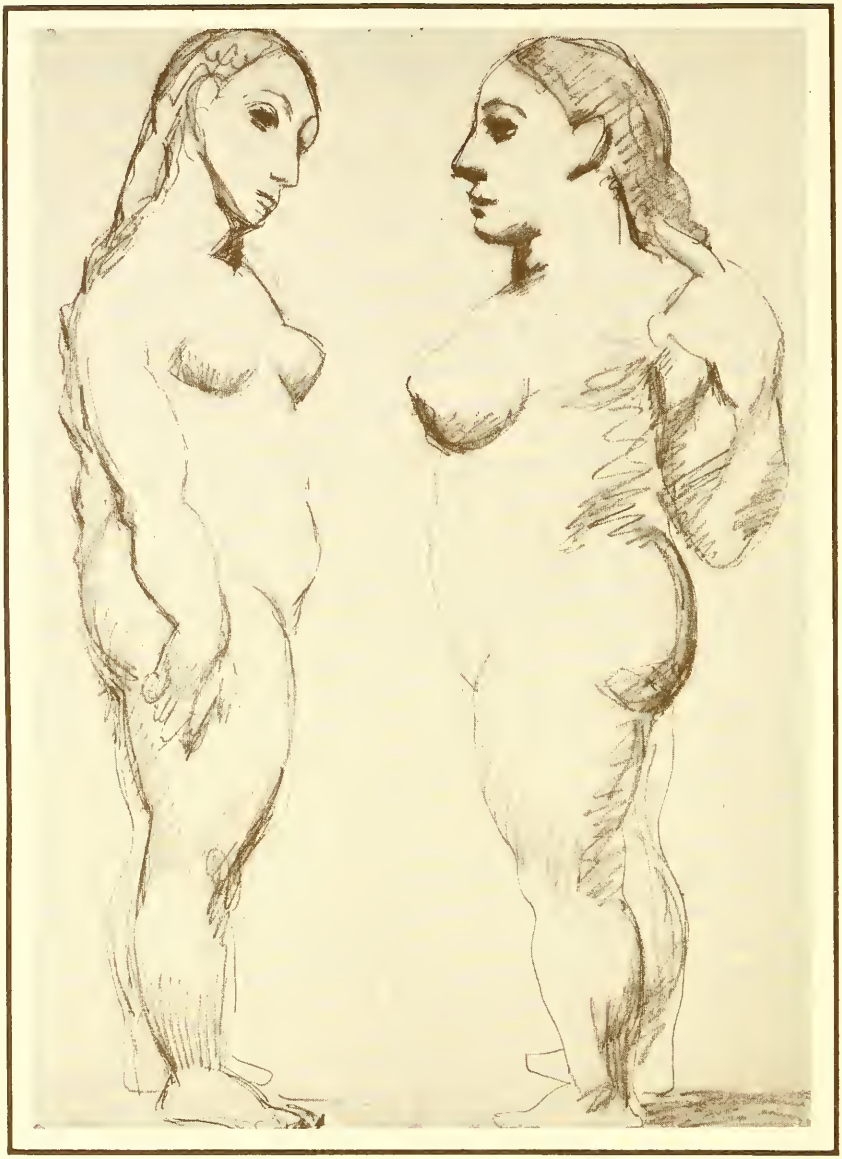
43. See Aldo Pellegrini, *New Tendencies in Art,* Robin Carson, trans. (New York: Crown, 1966) for the diverse tendencies following World War II, many of them ignoring the human figure altogether. As one example, Robert Rauschenberg, who belongs among the Pop Artists as much as in any one group, once said that he could send a telegram, calling it a portrait, and that it would *be* a portrait. The art object thus takes on its character from what is said about it, not what it is—a notion virtually unheard of before the twentieth century. The name generally given to this kind of arbitrary designation of objects is Conceptualism.

AUTHOR

George Kimball Plochmann attended the Lincoln School of Teachers College, Columbia University, New York, and later Columbia College, from which he received an A.B. degree in 1936. Following three years of postgraduate study at the University of Chicago, he taught English and humanities for two years at St. Lawrence University, Canton, New York. He served as an enlisted man in the U.S. Army from 1941 until 1945. Returning to the University of Chicago in 1946, he also taught part-time at Roosevelt College (later Roosevelt University) and at the Extension College of the University of Chicago. In 1949 he joined the faculty of Southern Illinois University at Carbondale and in 1950 received his doctorate in philosophy, with honors, from the University of Chicago, with a dissertation in the philosophy of biology. Except for interludes such as several months' travel on a Guggenheim fellowship and a visiting professorship at the University of Toledo, he has remained at Southern Illinois University ever since.

Dr. Plochmann's duties at Southern have been chiefly with the Department of Philosophy, but for a decade he also served as chairman of a task force to organize and teach a one-year course in the humanities. He also prepared instructional materials and delivered lectures on the history and philosophy of medicine at the SIU School of Medicine in Carbondale.

Included in Dr. Plochmann's published works are a two-volume historical and philosophical study of Southern Illinois University, an index, co-authored with Jack B. Lawson, to Ludwig Wittgenstein's *Tractatus,* an introductory book on Plato, and several dozen papers. He also edited and co-authored three volumes of studies and instructional materials in the humanities, which in this case included the disciplines of theatre, music, visual arts, literature, and philosophy. For the past twenty years Dr. Plochmann has served as editor of the Philosophical Explorations Series for the Southern Illinois University Press. In 1982 he retired from his official duties at the University, but has continued writing and editing. He is married to the noted artist Carolyn Gassan Plochmann and they have one daughter.



Pablo Picasso. Two Nudes Standing *(1906.) Soft pencil drawing, 630 x 469mm. (Photo courtesy of Art Institute of Chicago. Gift of Mrs. Potter Palmer.)*

FROM THE EDITOR

"What does art have to do with medicine?" The question came from a distinguished and experienced physician who received his training at one of the country's leading medical schools immediately following World War II. Once again, I was reminded of the continuing necessity to challenge a challenger to hunt for connections arbitrarily defined as unimportant.

The question itself is an historical artifact. In all probability it would not have been asked before the late nineteenth and early twentieth centuries. It did not become fashionable to ask until the disruption of World War II, when medical training was reduced to bare necessities for battlefield service. Some historians and many critics of modern medicine blame the Flexnerian reforms of medical education for the unnecessary and undesireable severing of medical practice from humane care, but examination of the history of medical education reveals that such disjointing did not occur until the time of post-war efforts to reinstitute adequate scientific training to the curriculum. The war and the later economic recovery, particularly with modifications in living brought about by advances in technology, produced pervasive disruption and led not just individuals but whole peoples to question the traditional meaning of human existence. Many artists, with uncommon sensitivities, captured these disruptions, pushing human inquiry to consider even the possibility of meaninglessness.

Spatially, the discipline of medicine has proceeded from the macrocosm to the microcosm, from the telescope to the microscope. Some art with medicine as its theme illustrates this shift and captures moments of discovery which new instrumentation permitted. Other art embodies this shift through portraiture and sculpture of noteable scientists and clinicians. Just as modern medical literature reflects increasing demand for precision in both method and findings, so too have the subspecialties of medical photography and illustration.

Photography and medical illustration freed many artists from the confines of a strictly literal presentation so as to challenge their

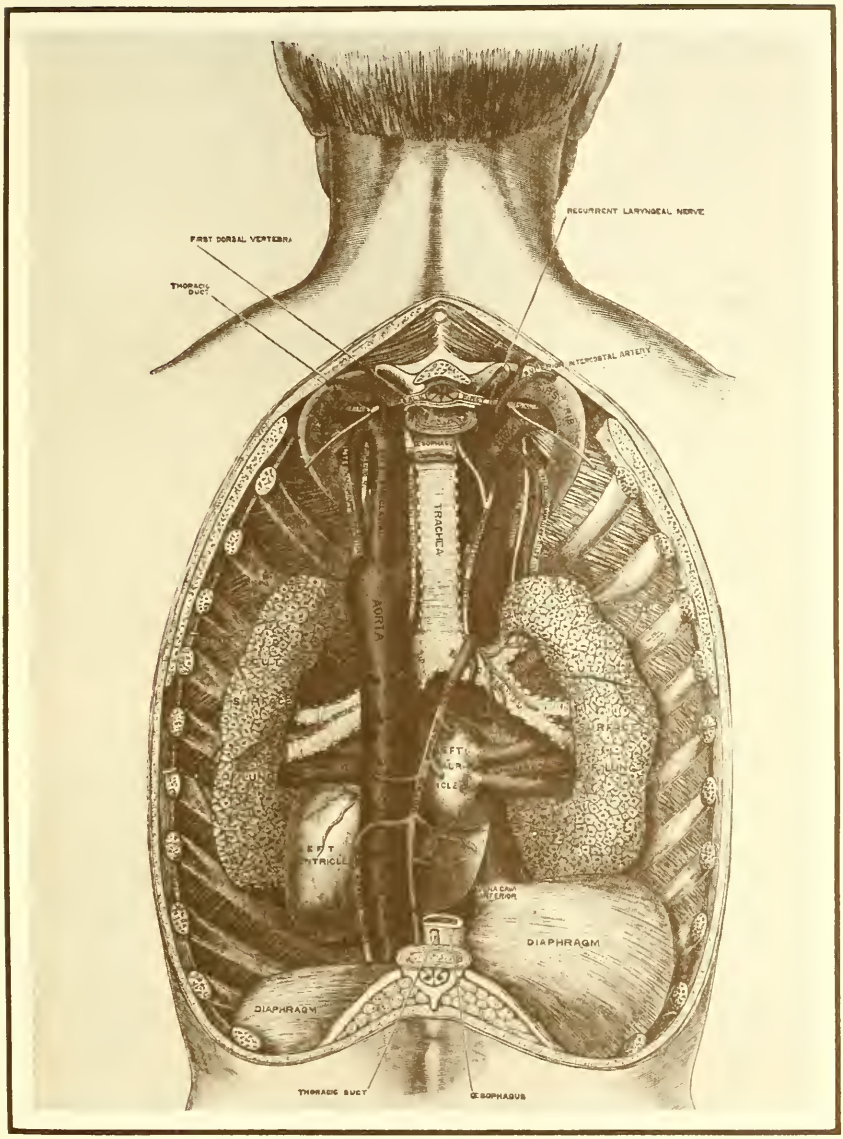
viewers to expand dimensional perception and cognition of the human body. Inquiry strategies used in the scientific method move from the imprecise to the precise. Regardless of the strategy used, however, there must be a starting point, what the philosopher calls a presupposition—that which is accepted as an unexamined first principle. Many modern artists challenge the scientific mind, particularly the clinical mind, to examine the starting points of their inquiry strategies. Is the human body as literal as that suggested by a photograph from an anatomy text? When does that picture cease depicting a human body and become solely an artifact? Does the understanding of an instrument of high technology take precedent over understanding of a patient's feelings? As Professor Plochmann well documents, modern art does not detract from healers' responsibilities for systematic and disciplined inquiries, but does call for them to be more than clinical painters by number.

Art has more to do with medicine than being the precise illustration of human anatomy or high technology. It has more to do with the healer's role than portraiture and busts of the great discovers. It has more to do with facing illness and disease than with the aesthetic and palliative use of the beautiful, though all these contributions are important. Art is the major challenge to unexamined perception—the starting point for common sense and pedestrian thinking.

While the relationship between art and healing has largely been ignored since the upheaval of World War II, a consideration which reveals an insight into the context of much of modern medicine, there are noteable exceptions.

Dr. M. Therese Southgate, deputy editor of *The Journal of the American Medical Association (JAMA),* for example, consistently adorns the cover of the *Journal* with the finest representation of European and American art. Usually, the author takes a full page for a cover story placing the work of art in an historical context, provides some information about the artist, and suggests an interpretation of the theme.

The Birmingham Museum of Art mounted the most extensive exhibition of art related to the healing professions in its 1981 show, "The Art of Healing: Medicine and Science in American Art." Director Richard N. Murray is quite correct in noting that "the professions of medicine, science, and art have had a close relationship in America," but he added, "little has been written on the artist's view of American medicine and science." William H. Gerdts, the distinguished curator and professor of art history, now



Reproduced from Henry Gray, Anatomy,Descriptive and Surgical. *Philadelphia: Lea Brothers & Co., 1887 (p. 938). Note the contrast between the representation of the human torso in this anatomical drawing and that of the whole body figures in Picasso's* Two Nudes Standing. *Given the emerging emphasis of specialization in medicine at the time, it is perhaps significant that nowhere in this particular edition of this classic text is there an anatomical drawing of the human body in its entirety.*

at the City University of New York, was commissioned to correct this deficiency. The Birmingham Museum catalogue contains his text and numerous color and black/white illustrations of the exhibition.

In 1976, The Society for Health and Human Values, through its research arm, The Institute on Human Values in Medicine, commissioned a dialogue under the direction of Geri A. Berg to examine how the need for a special visual awareness has led both the clinician and the artist to share their experiences. For each, sight must transcend the immediately apparent. The clinician must penetrate the surface to comprehend what ails the patient; the artist must penetrate color, form, and context—in Paul Klee's words, to "make visible." In his foreword to the published essays from the dialogues, Dr. Edmund D. Pellegrino observes that "the education of physicians has much to gain by a closer converse with the visual arts. Illness is announced in subtle nuances of color, hue, physiognomy, gait, mannerism, gesture, tremor, form and function—all visible to the eye but needing to be penetrated for meaning."* For many, the artist has taught how to enhance one's abilities to observe, to develop what Michael Foucault calls "the clinical gaze."

Learning how to look beyond the obvious, seeing contexts and connections, discovering the story of which the artifact is but an obvious part, is the challenge museum patrons increasingly accept. The challenge to curators and other information specialists is to bring together disparate parts of the story so that patrons can meet the challenge. *Passé* is that approach to exhibitions which display a variety of artifacts, label them accurately, and place them in historical context. Boring is the often haphazard and sometimes chronologically arranged portraits and photographs of the noteables in health science history.

The unique opportunity for curators and other health science personnel is to provide more depth for the stories told in their exhibitions, holdings and publications. We may be living in too literal a generation, but we also live with a generation of patrons who search for meanings in what they see. These patrons are at that starting point of inquiry which the modern artist sets before us. What options the human mind has available to proceed logically is determined by the starting point.

The test for any exhibition is not alone whether a generation can discover what preceded it, but whether those who were part of the times from which the artifacts have come are able to see themselves in new dimensions. When a surgeon can see the

Hyman Bloom. Autopsy *(1953). Crayon. 54½ x 37½ inches. (Photo courtesy of Whitney Museum of American Art. Purchase. Acquisition Number 54.18.)*

contrasts between the understanding of the human body in Thomas Eakin's *The Gross Clinic* (1875) and Hyman Bloom's *Autopsy* (1953), there emerges not just a story from history but an awakening presence.

It may well be that the amputee who discards his $40,000 electrostimulated arm hand after only two months because "it isn't right" may be struggling with the same starting point of inquiry as the modern artist who distorts the human figure. The struggles of human inquiry challenged by illness and disease is the subject. The modern artist has provided a means for study.

The pages of this *Quarterly* are open for those individuals willing to share how they address the question, "What does art have to do with medicine?" The opportunities of this age are open for fostering more exchange between the visual and healing arts. Will we accept them?

—Glen W. Davidson

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*Quotation excerpted from the Foreword by Edmund Pellegrino, M.D., in *The Visual Arts and Medical Education,* Geri Berg, ed., Carbondale: Southern Illinois University Press, 1983.

INDIA SCIENCE FESTIVAL TO OPEN IN CHICAGO

A premier exhibition entitled "India: A Festival of Science" opens June 6 at Chicago's popular Museum of Science and Industry. This three-month exhibit features the tremendous contributions India has made to the fields of science and technology over the past 4000 years. Among noteworthy contributions by Indian scientists are such basic discoveries as the value of Pi, the concept of zero, a considerable body of early astronomical research, and the sophistication of metallurgy.

Visitors to the "India" exhibition will recognize the extent of knowledge gained from Indian thinkers in the fields of medicine and the health sciences. The physical concepts accepted today as basic in rational discussion on cosmic evolution have long been an integral part of the Indian religious and philosophical belief system. Classic Indian thinkers believed that special knowledge was contained in different sciences, and that this knowledge was real, yet gave a glimpse of the Absolute.

AYURVEDIC MEDICINE

One of the most important contributions made by India to the study of medicine is the material contained in the Ayurvedic medical texts. These classics actually comprise the Ayurveda, a branch of the sacred Atharvaveda — the fourth book of Vedic literature. The Charaka Samkita was composed in the first century, the Sushruta Samkita in the second century, and the Astanga Hridaya in the seventh century. Indicative of their value is the fact that these three texts are still consulted by medical practitioners today. In their venerable pages are enumerated the eight branches of Ayurveda surgery; discourse on care and treatment of the ears, eyes, nose and throat; therapeutics; pediatrics; toxicology; mental and supernatural disease; rejuvenation and virilification.

A more specific examination of the texts reveals that the Charaka Samkita describes no less than 341 plant substances, 64 mineral substances, and 177 substances of animal origin for the preparation of medicine. The Sushruta Samkita describes eight different surgical operations, more than 300 operations, 42 surgical processes and 121 types of instruments. Also in this latter text is a detailed description of what today is called plastic surgery — the grafting of skin and muscular tissues.

Ayurvedic medicines are still prepared in India using classical methods. Depending upon their intended use, these medicines are included in pill form, concentrated decoction, pastes or oil base, fermented drinks, etc.

UNANI MEDICINE

In contrast to the Hindu emphasis on Ayurvedic medicine, Moslem tradition uses Unani, a natural healing process in which devotees employ medicines from herbal, mineral and animal origins. Usually Unani medicines are prepared in tablet form, or in pastes and syrups.

CONTRIBUTIONS IN CHEMISTRY

As is evident from the exhibit, the development of chemistry and alchemistry had a firm experimental base in ancient India. Chemical processes such as the creation of alkalies were known since the time of the early Ayurvedic medical texts. Mercurial compounds, metallic preparations, inorganic salts and alloys were experimented with in the treatment of diseases. Ancient records show that Indian alchemists had fully developed laboratories in the latter half of the fifth century.

EXHIBITION HIGHLIGHTS

Other activities scheduled during the India exhibition include a lecture, seminars and ethnic performances by members of the local Indian community in Chicago.

On July 21, Subrahmanyan Chandrasekhar, the 1983 Nobel laureate in physics, will lecture on "Relativity and Common Sense." A pioneer in the development of conditions governing the collapse of stars, Dr. Chandrasekhar is the Morton D. Hull Distinguished Service Professor at the Laboratory for Astrophysics and Space Research at the University of Chicago.

On June 6, a panel of Indian scientists and a representative from NASA will discuss "Space Technology for the Common Man." On July 20, seminar participants will examine "Scientific, Technological and Environmental Issues in India." A seminar entitled "Indo-U.S. Collaboration in Science and Technology" will complete the series on August 10.

Native artisans will be featured throughout the exhibition as they demonstrate their extraordinary skills in wood carving, silver filigree, embroidery, gemstone cutting, hand loom weaving, solapith work, the art of casting bronze by the lost wax method, and marble inlay.

Models of famous scientific structures, audiovisual presentations and audience participation workshops will be prominent in the exhibit. Other highlights include an authentic tandoori restaurant on the premises, featuring luncheons prepared by master Indian chefs, and an Indian market filled with such stunning native wares as *warli* (painting on fabric) and *shisha* (handiwork with mirrors incorporated into the design).

A PREMIER EXHIBITION

"India: A Festival of Science" is a major showing to be sure, and includes numerous artifacts never before on display in the West. The exhibition itself plays an integral role in the Festival of India, an ambitious project which originated during a state visit by the late Prime Minister Indira Gandhi, when she and President Reagan agreed to emphasize cultural exchange between India and the United States.

Presented by the National Council of Science Museums in Calcutta, "India" runs through September 2 in Chicago, after which it will travel to a number of other U.S. cities before returning to India.

At the Museum of Science and Industry in Chicago, June 6 — September 2. Call the Office of Public Relations at (312) 684-1414, Ext. 208, for ticket and general information. Or write to the museum at 57th Street and Lake Shore Drive, Chicago, Illinois, 60637-2094.

ANNOUNCEMENTS

NEH DEADLINES FOR MUSEUM AND HISTORICAL ORGANIZATION SUPPORT

The National Endowment for the Humanities has given deadlines of June 10, 1985 and December 9, 1985 for applications to the Program for Museums and Historical Organizations within the Division of General Programs. Support for traveling and permanent exhibits, exhibits based on the sharing of collections, and creation of exhibition catalogs are only a few of the offerings from the division's Program for Humanities Projects.

Guidelines have recently been revised so as to facilitate additional areas of support, including documentation of an organization's permanent holdings for public and scholarly access, consultant grants to advise organizations of possibilities for automated control of collections, funds for the development of priorities for conserving permanent collections, and numerous other areas.

For additional information contact Thomas H. Wilson or Sally Yerkovich at (202)786-0284.

DITTRICK MUSEUM OF HISTORICAL MEDICINE ANNOUNCES COLLECTION RECLASSIFICATION

Howard Dittrick Museum of Historical Medicine in Cleveland has undertaken a total reclassification of its collection with the aid of a grant from the National Endowment for the Humanities. The old card catalogue provided access to the collection through a name

(of object) index. Through the years this system has been found wanting in that it encouraged misjudgement of functional and technological relationships among objects. It is now being replaced with a subject index system which relies primarily on function of object, modified as necessary by technological relationships. The system is based on the MeSH (Medical Subject Headings) index used as a standard for subject indexing in medical libraries. Although it cannot conform wholly to the MeSH system, the reclassification has benefited from MeSH in the provision for a structured and controlled basis from which to work. The collection will be stored according to the new system and within six months the process of transferring the catalogue to a computer will begin.

Questions may be answered by calling (216)368-3648.

TORONTO MUSEUM OF THE HISTORY OF MEDICINE ANNOUNCES GRANT

The Museum of the History of Medicine at the Academy of Medicine in Toronto has been awarded a grant of $9,800 by the Museum Assistance Programmes of the National Museums of Canada towards the planning costs of a traveling exhibition, "Mother and Child: Themes in Maternal History." The exhibition and accompanying materials are being organized in affiliation with the Mother-Child Project, Incorporated. The exhibition, which will travel across Canada, opens at the Ontario Science Centre in late 1986.

Nearing completion also in the museum is the nineteenth-century gallery where medical practice, its changes and development from 1800-1900 will be presented. Wherever possible, artifacts displayed will be objects that have been made or used in Canada. The first appendix removed in North America will be displayed here!

Contact Felicity Nowell-Smith for more information at (416)922-0564.

MCDOWELL HOUSE OPEN TO THE PUBLIC

Visitors to the renowned McDowell House in Danville, Kentucky can relive the fascinating history of one of America's pioneer surgeons. Ephraim McDowell made medical history on Christmas morning, 1809, when he performed the first successful removal of an ovarian tumor on a pioneer woman. McDowell went on to become famous as the "father of abdominal surgery" and his contribution to health care for women was enormous. A tour through Dr. McDowell's home, with its apothecary and gardens, demonstrates faithful restoration to its original charm of 200 years ago. The house and shop stand on the original site and contain furnishings of the period, some of which are family connected. The house is an example of early Georgian architecture and was built in three stages, from 1792-1820. The apothecary shop was used by Dr. McDowell from 1795-1820, and is furnished with an extensive collection of eighteenth- and nineteenth-century apothecary ware. The furnishings in the house illustrate the everyday life and culture of early Kentuckians.

Call Carol Johnson, Assistant Director, at (606)236-2804 for more information.

LOUISVILLE COMMITTEE RESTORING MEDICAL SCHOOL BUILDING

Louisville area residents have been hard at work with the restoration of an early twentieth-century medical school building into pleasant quarters for the local visiting nurse association, the city's hospice program, the county medical society and sundry volunteer health agencies. Two stories of a contiguous wing of the renovated building are newly finished as a Ronald McDonald House.

Since the old medical school facility obviously saw a lot of history, a special commitee is endeavoring to make it a veritable museum of medical progress. Particular emphasis will be on presenting memorabilia representative of the original use of the facility. Interested parties can contact Dr. Arthur H. Keeney at (502)588-5463.

CLEVELAND HEALTH EDUCATION MUSEUM LECTURE SERIES

"Drugs: Approach with Caution," was the fifth and final lecture in the "Living Longer, Living Better" series offered by the Cleveland Health Education Museum on May 19. Learning what drugs to take and what the side-effects may be along with selecting over-the-counter medications was discussed. Speakers were Dr. Jeffrey L. Blumer, Chief, Division of Pediatric Pharmacology, Critical Care, and Pediatric Emergency Services, Rainbow Babies and Children's Hospital; and Carol Miller, MSN, instructor in Community Health Nursing at Frances Payne Bolton School of Nursing, Case Western Reserve University. The moderator was Lowell F. Bernard, Executive Director, Cleveland Health Education Museum.

EXHIBITS

ONGOING EXHIBITS

Yale Medical Historical Library
Features Streeter Collection

Visitors to the Medical Historical Library at Yale University can view an especially interesting current exhibit devoted to Dr. Edward Clark Streeter's Collection of Weights and Measures.

The common thread unifying the exhibit is Dr.Streeter's belief, as a physician and medical historian, that the study of weights and measures is the foundation of all sciences. This fascinating collection represents Dr. Streeter's lifelong quest to document science and history, emphasizing the events and personalities that shaped it. Accompanying the exhibit are reproductions of paintings, prints and drawings depicting the use of weights and measures both realistically and symbolically. Also included is information on such topics as: material and form of weights; principles of scale design; standards of measurement; variations in liquid and dry capacity measures and measures of length; and measuring systems.

For more information, contact Ellen Danforth, Curator, Streeter Collection of Weights and Measures, (203)785-4354.

Permanent Exhibit at Cleveland

"Theatre of Sexuality" is the title of a permanent exhibit on display at the Cleveland Health Education Museum. More than just a theatre on the topic of reproduction, the "Theatre of Sexuality" explores, through the use of visual aids, many of the

topics associated with reproduction, development and societal attitudes. A major emphasis is placed upon the genetics involved in human reproduction and how we inherit individual characteristics. Sex determination is also explained. Completing the program are discussions and graphic representations of early conception, development and the concept of gender identity.

Call the Cleveland Health Education Museum at (216)231-5010 for details.

PAST EXHIBITS

Medicine in Caricature at Toronto

"Medicine in Caricature: The Patient's Point of View." This exhibit of English and French caricatures from 1780-1830 opened at The Museum of the History of Medicine in Toronto in December, 1984 and ran through May, 1985. Prints drawn from the museum's permanent collection illustrated aspects of the doctor-patient relationship through the eyes of such artists as Rowlandson, Gillray and the Cruikshanks.

Interested parties can contact Felicity Nowell-Smith, Curator, Museum of the History of Medicine, at (416)922-0564.

Consumer Awareness: A Healthy Marketplace

"Consumer Awareness: A Healthy Marketplace" ended May 17 at the Cleveland Health Education Museum. The exhibit used visual and audio displays for a participatory focus on consumer rights in a buyer-responsive marketplace. In recognition of National Consumer Education Week, the exhibit focused on issues such as medical quackery, child safety, health spa contracts and funeral regulations. Highlights included a computerized "Consumerland" game and a slide show on responsibilities of the teenage consumer. Coordinated by the museum and the Cleveland Office of Consumer Affairs, the exhibit contained exhibits from a number of local, county, state and national organizations, as well as private companies committed to consumer education.

Call Kevin Blanchet at (216)231-5010 for more information.

Visiting Nurse Associations
1885-1985

The Division of Medical Sciences of the National Museum of American History ended an exhibit heralding the role of visiting nurse associations in the last hundred years, on April 30. Items included Mary Breckinridge's saddlebags, which she used in the 1930s on her rounds in Kentucky with the Frontier Nursing Service; a doll dressed in the uniform of the 1898 Buffalo Visiting Nurse: a button of 1908 for tag day, a novel method of asking people in the Buffalo community to contribute to the VNA; a number of pictures of nurses on the job, a modern visiting nurse uniform and bag, etc. The Washington, D.C., VNA is celebrating its 85th anniversary and was represented. For details, contact Audrey Davis, Curator, Division of Medical Sciences at the National Museum of American History, Smithsonian Institution, Washington, D.C., 20560.

The exhibit "Someone You Can Count On," celebrating a hundred years of visiting nurses in the United States, recently ended a successful run at the National Museum of American History. (Photo courtesy of the National Museum of American History.)

PUBLICATIONS COMMUNICATION

Currently available from the Historical Division of the Cleveland Health Sciences Library:

James M. Edmonson, *Surgical Garb: 1870-1920.* 20 pp., illustrated. November 1982. $5.00

Ingrid D. Ebner and Glen P. Jenkins, *Skeletons in Our Closet. Skeletal Illustration as Represented in the Rare Book Collection of the Cleveland Health Sciences Library.* 44 pp., illustrated. October 1983. $8.00. (Because the collection on which it is based contains most of the significant anatomical works from the fifteenth through the nineteenth centuries, this heavily illustrated booklet is a useful survey of the history of the illustration of the skeleton.)

Due to be published soon:

James M. Edmonson, *A Cleveland Surgeon and His Instruments: Gustav C. E. Weber.* Expected publication date: mid-summer 1985. (The collection on which this study is based is at the Howard Dittrick Museum of Historical Medicine. It is an unusually complete collection of a late nineteenth-century surgeon, typifying the surgeon's armamentarium of the time.)

These publications are all part of a series called *Occasional Contributions to the History of the Health Sciences from the Historical Division of the Cleveland Health Sciences Library.* Write to the Library, 11,000 Euclid Avenue, Cleveland, Ohio, 44106.

PERSONNEL

St. Louis Science Center Seeks President

The merging of the Museum of Science and Natural History and McDonnell Planetarium to form the St. Louis Science Center has resulted in a projected enlargement of facilities and services. A new position has been created for a president, who will be hired as the Chief Executive/Chief Scientist, reporting to the governing Board of Commissioners. This individual will head a staff of 32 permanent and 22 part-time employees and will oversee the development of the St. Louis Science Center into a national-class institution. The new president's responsibilities will include:

- building the science center;
- becoming a spokesman for science issues;
- creating an atmosphere of excitement for learning;
- providing leadership for fund raising.

Interested parties should contact M.C. Throdahl, chairman, Search Committee, St. Louis Science Center, 5050 Oakland Avenue, St. Louis, MO 63110. (314)652-5500.

The Art of Healing

MEDICINE AND SCIENCE IN AMERICAN ART

The Birmingham Museum of Art offers the opportunity to purchase an excellent reference guide to medicine and science in American art. The outstanding book, *The Art of Healing,* was published on the occasion of a major exhibition at the museum in 1981. The 125 page text contains fifty color plates and fifty half-tone illustrations. Professor William H. Gerdts, author, provides a thorough analysis of the relationship between the visual arts and the professions of science and medicine in the United States from the seventeenth century to the present. Works by well-known American artists from Benjamin West to Andy Warhol are included.

A full color poster featuring Thomas Eakin's famous painting *The Gross Clinic* is also available.

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Editor Geri Berg is an art historian who at the time of these discussions was cochair of the Program on Humanistic Studies at Johns Hopkins University School of Health Studies in Baltimore, Maryland. With the seven other essayists in the volume, she develops a novel perspective on learning in medical education.

The Visual Arts in Medical Education, Geri Berg, ed.
Southern Illinois University Press, 1983 ($17.45)

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